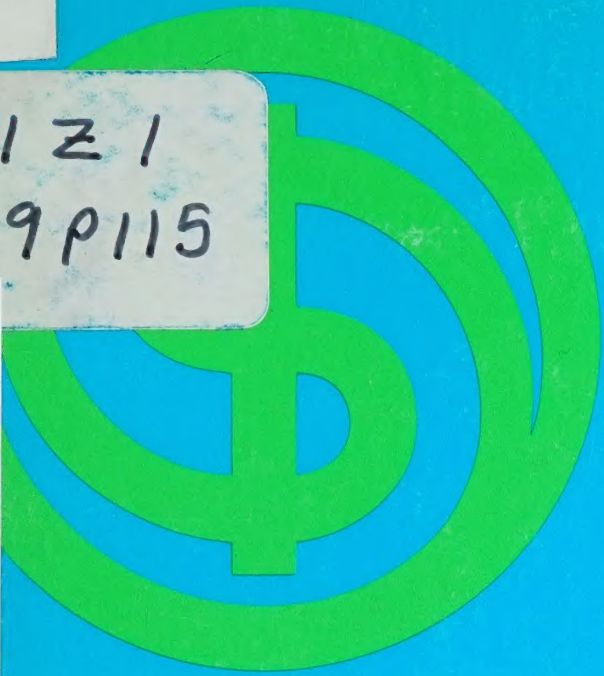


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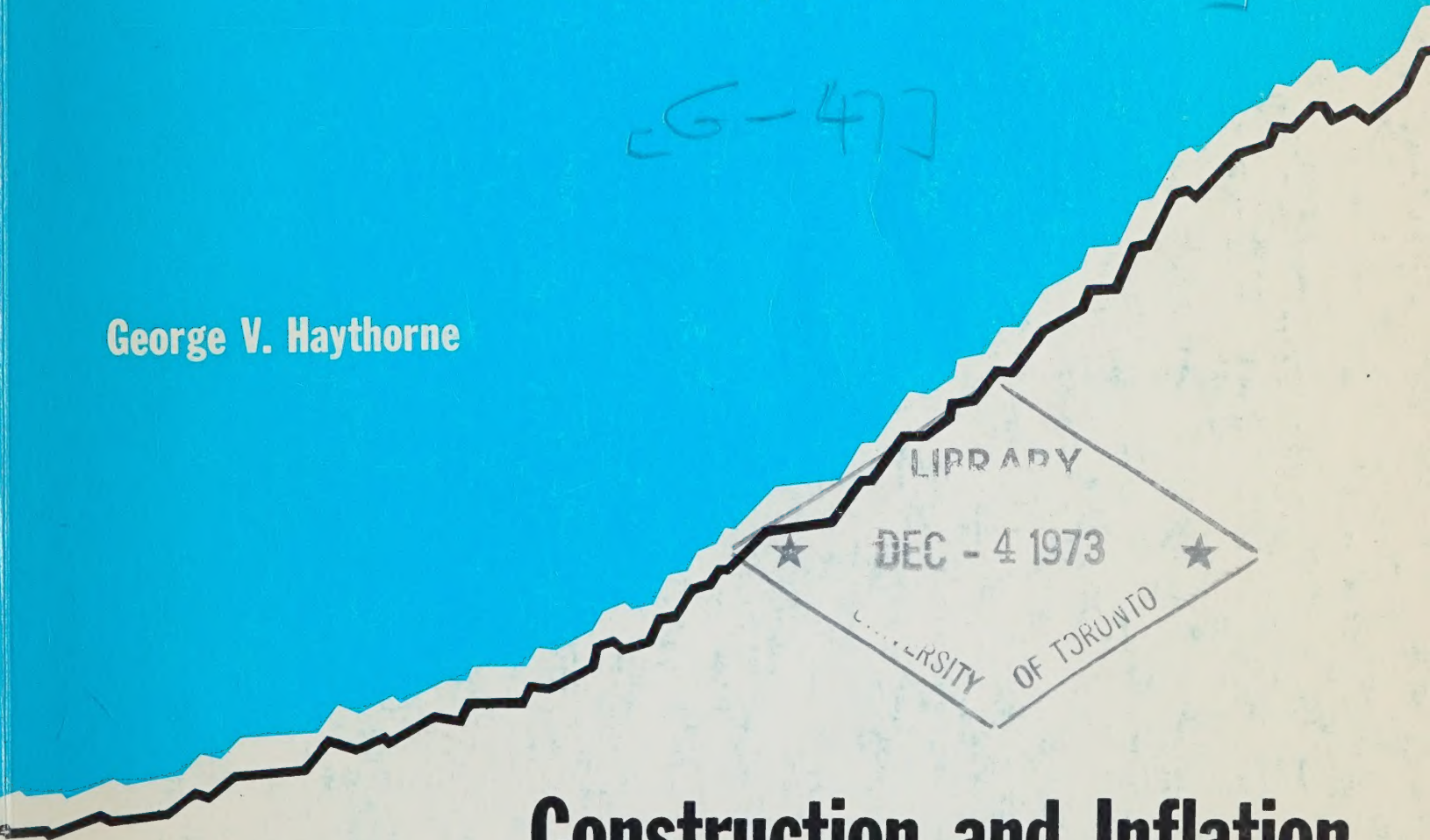
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construction and inflation

by

GEORGE V. HAYTHORNE

Prices and Incomes Commission
Ottawa, Canada

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ERRATA

- Page
- viii - Title Table XXXI, insert "Building" before "Costs".
- Title Table XXXII, change "Estimated" to "Acquisition Cost In."
- Title Table XXXIII, insert "Prices of" before "Building" and line thirty-four, change "1972" to "1971".
- Table "IXL" change to "XXXIX".
- x - Title Figure 38, insert comma after "Corporations".
- 4 - Second to last line change "-0.8" to "-4.8" and "24.6" to "43.2"; last line change "nine" to "fourteen".
- 5 - Line two change "seven" to "three"; line three change "8.2" to "12.4"; line four change "1.3" to "2.3"; line eleven, change "-3.6" to "-6.3"; footnote 4 line two, change "still wider" to "narrower"; and last line, change "all" to "the same".
- 47 - Table V, footnote, line eight, change "1970" to "1972".
- 51 - Footnote 15, change "page 52" to "pages 71-73".
- 58 - Table XIII, Average Annual dollar Earnings for plumbers in Ontario should read "7,900".
- 59 - Seven lines from the bottom, insert "are" before "shown".
- 70 - Lines seven and eight, "Table XV" should read "Table XVI".
- 79 - Line four, insert "19,900" after "to".
- 85 - Footnote C, line three, correct to read "rubbers".
- 86 - Table XIX insert "Percentage of" before "Total" in heading of columns 3 and 6.
- 94 - Footnote 28, last line, after "and" to read "of Quebec by Centrale des Syndicats Démocratiques, (Congress of Democratic Unions)."
- 95 - Line fifteen, change "have" to "has"; line 24 change "retrain" to "retain".
- 101 - Line five, change "over" to "cover".
- 103 - Fourth line after Table XXX, delete "and" and start new sentence with "overhead"; fifth line, insert "account" after "profit."
- 104 - Three lines from bottom change "rate" to "rates".
- 109 - Ten lines from bottom change "buildings" to "builders".
- 113 - Six lines from bottom delete "and" and two lines from bottom, insert comma after "contains".
- 121 - Second line of paragraph headed "School" change "are" to "is".
- 122 - Table XXXV, footnote a, line three, insert comma after "moreover".
- 123 - Line five, insert "occurred" before "over"; lines ten and eleven, replace "that year" by "1970"; Table XXXVII, footnote a, line three, change "costs" to "items"; footnote b, line two, insert comma after "1965" and line nine, change "years" to "year".
- 129 - Line twenty-nine, change last word "of" to "to".
- 133 - Line thirty, insert "were" before "formulated".
- 134 - Line fourteen, insert "a" before "special".
- 138 - Line seventeen, change "TABLE IXL" to "TABLE XXXIX".
- 142 - Line eleven, change "has" to "have"; footnote 1, signatures at end of the letter should read "Erhardt" in two places.
- 144 - Line two, change "of" to "or".
- 151 - Line thirteen from bottom, change "negotiations" to "negotiating".
- 155 - Line eighteen, insert footnote 2 after "Committee" and add footnote as follows at bottom "See Appendix C".
- 156 - Line four of fourth paragraph, change "of" to "or"; line ten, insert comma after "time" and line twelve change "of" to "or".
- 163 - Line twenty-seven, change "completed" to "complete".
- 164 - Line twenty, change to read "a more even year to year and season to season work pattern."
- 165 - Line fourteen, insert "a" after "June".
- 166 - Line eight from bottom, change "A.1(i)" to "B.1(i)".
- 167 - Line one, change "level" to "levels".
- 170 - First line of last full paragraph change "estimated" to "estimates".
- 172 - Footnote eight, line three, insert comma after "Chairman".
- 174 - Line fifteen, insert "is" after "program"; line twenty, change "of" to "or" after "months".
- 175 - Thirteen lines from bottom, change "was" to "were".
- 176 - Line fourteen change "55,000" to "75,000".
- 178 - Line seven, change "or" after "week" to "of" and line nine, change "or" to "of".
- 179 - Line three, insert "office" after "on-site"; six lines from bottom, add at end of line "covering regular hours".



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PREFACE

This study of the construction industry in Canada evolved as the Prices and Incomes Commission pursued its two principal tasks. Set out in the Order in Council appointing the Commission in June 1969, these tasks were to inquire into "the causes, processes and consequences of inflation"; and to inform those currently involved in price and income decisions, the general public and the Government on "how price stability may best be achieved". The study consists mainly of background papers, research findings and proposals for possible future action to achieve greater stability in the construction industry prepared by one of the Commissioners who undertook a particular responsibility in this area.

It received its first major impetus during the spirited and in some respects germinal discussions of the Committee on Construction and Property Development at the National Conference on Price Stability in Ottawa in February 1970. It was recognized by this Committee and later by the Conference as a whole that "costs have been advancing particularly rapidly in most sectors of the construction industry and that special steps are needed by all concerned to reduce the rate of increase in these costs, including efforts to level out the flow of construction work". The representatives of the construction industry present, moreover, "agreed that individual firms in the industry if called upon to do so would during 1970 absorb a proportion of their increased costs in accordance with the general pricing criteria" adopted by the National Conference.¹

¹ For a fuller report on the National Conference on Price Stability see *Canada's Experience with Incomes Policy, 1969-1970*, G. A. Berger, Prices and Incomes Commission, Information Canada, Ottawa, 1973, pp. 21-29.

A second important stimulus to the study occurred early in June 1970, with the presentation to the Commission of a submission prepared by a broadly representative national committee of contractors and workers in the mechanical sector of the construction industry. This submission, reproduced in Appendix A, is noteworthy also in that it was the only one made jointly by employer and union representatives during the course of the Commission's work. Later a number of other developments influenced the nature and direction of the study.

A short discussion of the place of construction in the Canadian economy is presented in the opening chapter. This is followed in chapter two by an examination on a national and provincial basis, of the nature and extent of the fluctuations that have occurred over recent decades in construction operations. The consequences of these fluctuations in the industry and in the economy are analyzed in chapter three. This section of the study also includes a discussion of the ways in which inflationary forces in the economy contribute to, and are stimulated by, excessive demand conditions in markets covering construction materials, labor, financing, products, land and other items. Finally in chapter four measures needed to achieve greater stability in construction operations are examined and some proposals are made for possible further exploration by those most directly involved, namely, contractors, unions, professional bodies, private and public clients and governments.

The author thanks his fellow Commissioners and those members of the Commission staff who contributed to this study. Included among the latter are Donald G. Laplante and E. Thomas Houston who undertook special tasks reported on in chapter three and Florence Greene, Donald V. Brazier, Felix Quinet and Liaqat Ali each of whom ably assisted in a variety of ways.

Appreciation is expressed also to those directly associated with the construction industry serving in management, union, client and government roles in all parts of the country. Members of each group shared freely not only their experiences in, but also their concerns about, the future of this important sector of the Canadian economy.

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chapter one

THE PLACE OF CONSTRUCTION IN CANADA'S ECONOMY

Construction occupies an important position in the Canadian economy and in society generally. In value terms building and engineering activities carried out annually total around 17 per cent of Gross National Product.¹ The construction industry, which is responsible for the bulk of all such operations, itself employs seven per cent of the country's total labor force.² Many other Canadians, although not directly engaged in the industry, rely heavily on construction. These include those who fabricate materials, supplies and equipment used on building and other projects and those who provide basic utilities, transportation and other services.

It is obvious that an activity of such importance both affects, and in turn is affected by, the pulse of the whole economy. When sharp variations in the volume of construction take place, be they national, regional or local, they invariably show up in the total level of economic activity in the area concerned. The reverse also occurs, inescapably. Decisions to proceed with new plants, housing, highways or other projects, or to make major extensions, alterations or repairs to existing structures are quickly reflected in building activity. Large construction outlays in turn provide an impetus to the professional, trade and other services required not only for the specific projects but also for the whole economy. Equally substantial increases or decreases in the total demand for new buildings and other structures

¹ The average of the annual estimates of the value of total construction work performed in Canada, which includes the cost of labor, all materials and basic services used, expressed as a percentage of the Gross National Product over the five years from 1967 to 1971 was 16.7 per cent. Cf. *Construction in Canada*, 64-201, and *National Accounts*, 13-201, Statistics Canada.

² The average level of the labor force in the construction industry in Canada based on monthly estimates over the five years from 1967 to 1971 was 550,000. This equalled 6.8 per cent of the average monthly level of the total labor force over the same period. Cf. Table V p. 47 below.

clearly have direct repercussions in the construction industry as well as in those sectors of the Canadian economy which are dependent on construction for much of their activity.

Given present institutional arrangements and policies, wide-spread fluctuations in the volume of work have inevitably occurred from year to year and from one type of construction to another.³ They have also occurred for climatic and other reasons from season to season. This highly erratic flow of construction activity places a heavy burden financially and otherwise on both contractors and workers. The accompanying strains involve, at varying times, either over-work or serious unemployment for a large proportion of those attached to the construction industry. The severity of the absence or irregularity of work is reflected in the fact that construction with seven per cent of the labor force has accounted for nearly 17 per cent of all unemployment in Canada over recent years, or for more than double its share of the labor force.⁴ Uneven strains on land resources, financing arrangements, labor costs, building materials and equipment also result from the peaks and valleys in construction activity, often with far-reaching consequences.

When excessive demand pressures prevail for any length of time, the industry itself not only feels their effects, but acts as a purveyor of them to the rest of the economy, frequently adding to their intensity in the process. Conversely when slackness or recessions occur, the industry likewise experiences the impact and this in turn has repercussions throughout the economy.

³The analysis below of construction fluctuations and of their impact on the economy has been extended and updated since it was originally presented in an address to the Construction Industry Development Council in Ottawa in June 1971.

⁴From 1967 to 1971 the estimated average level of unemployment in the construction industry based on monthly labor force estimates was 71,800. This amounted to 16.9 per cent of the average monthly level of total unemployment in Canada over the same period. Cf. *The Labour Force*, 71-001, and special compilation prepared by Statistics Canada.

chapter two

FLUCTUATIONS IN CONSTRUCTION

Measurement of Year-to-Year Fluctuations

Owing to the great variety of construction operations and building structures and services in Canada and to the wide range of the kinds of business firms involved in the industry, it has not yet been possible to develop a satisfactory single measure of the total volume of national production. With the aid of information received from firms, institutions and governments relative to total expenditures incurred in new and repair construction, it has been possible, however, to develop reasonably reliable annual estimates of the value of total construction work. Most of this is performed by contracting firms whose operations collectively comprise the construction industry.

The estimates of overall construction activity, prepared by Statistics Canada, provide a broad indication of the growth in Canadian construction over the past half century.¹ The quality and comprehensiveness of the data furnished by those surveyed have improved over the years but it cannot be assumed that the coverage is complete or that the returns are always of a uniform character. They are, however, generally satisfactory as a basis for developing reasonably reliable estimates.

During recent years Statistics Canada has undertaken a more detailed annual census of some construction categories. This census will assist in the develop-

¹The estimates are based largely on the returns from the annual Capital and Repair Expenditures Survey conducted by Statistics Canada in co-operation with the Department of Industry, Trade and Commerce. This survey presently secures information initially each fall from some 24,000 establishments on their actual and anticipated construction expenditures.

ment of an overall measure of the volume of construction output. In the meantime it is providing more complete information on the various input factors which in turn yield better productivity data. Three categories have been covered to date under this annual construction census program, namely mechanical contracting, electrical contracting and highway, road, street and bridge contracting.²

The Canadian Picture

An annual estimate of the value of work performed on total construction in Canada has been made for each year starting in 1926. These annual estimates are presented in Table I.³ They reveal how the industry has expanded throughout Canada particularly over the past 30 years. After fluctuating widely between one half and one billion dollars for most of the period from 1926 to 1945 the estimated annual value of all construction began to increase steadily after 1946. By 1956 the estimated annual level expressed in current dollars had quadrupled over the decade to six and one half billion. In 1966 it had risen to eleven billion and by the early 1970s the annual figure was over 16 billion dollars.

The total growth pattern over the years, presented in the top portion of Figure 1, appears at first glance to have been relatively smooth. On closer examination it is clear that there have been periods of comparatively slow and even negative growth and others of rapid expansion. These are indicated by the changes in the slope of the line in Figure 1, and in the annual indexes, based on 1961 equal to 100, in Table I. Negative rates of increase occurred during the early 1930s, in 1938, 1944 and during 1959 and 1960. Conversely, there were increases averaging close to 25 per cent annually in the late 1940s and high but less rapid rates in the mid-1950s, mid-1960s and again in 1971. The yearly increases since 1961, expressed in constant dollars, are significantly less than those expressed in current dollars, but these too have been substantial in most years except 1970.

A more striking picture of the fluctuations that have occurred in construction activity is obtained from the year-to-year percentage changes in the estimated annual value of work performed. These yearly percentage changes from 1927 to 1972 are included in Table I and presented graphically in the lower part of Figure 1. The major depression influences of the thirties and the far-reaching wartime effects of the forties are clearly apparent as well as the continuing although less violent cyclical swings in more recent decades.

The year-to-year fluctuations in construction activity as revealed by these estimates of annual value of work performed are more wide ranging than those which occur in most other sectors of the Canadian economy. Over the post World War II years, the year-to-year changes in value of construction using national accounts data have ranged between -0.8 per cent in 1960 and 24.6 per cent in 1946. There have been nine years, moreover, out of the 26 in which the total value

²Cf. *The Mechanical Contracting Industry, 1967, 1968, 1969 and 1970; The Electrical Contracting Industry, 1969 and 1970; and The Highway, Road, Street and Bridge Contracting Industry, 1970*, Statistics Canada.

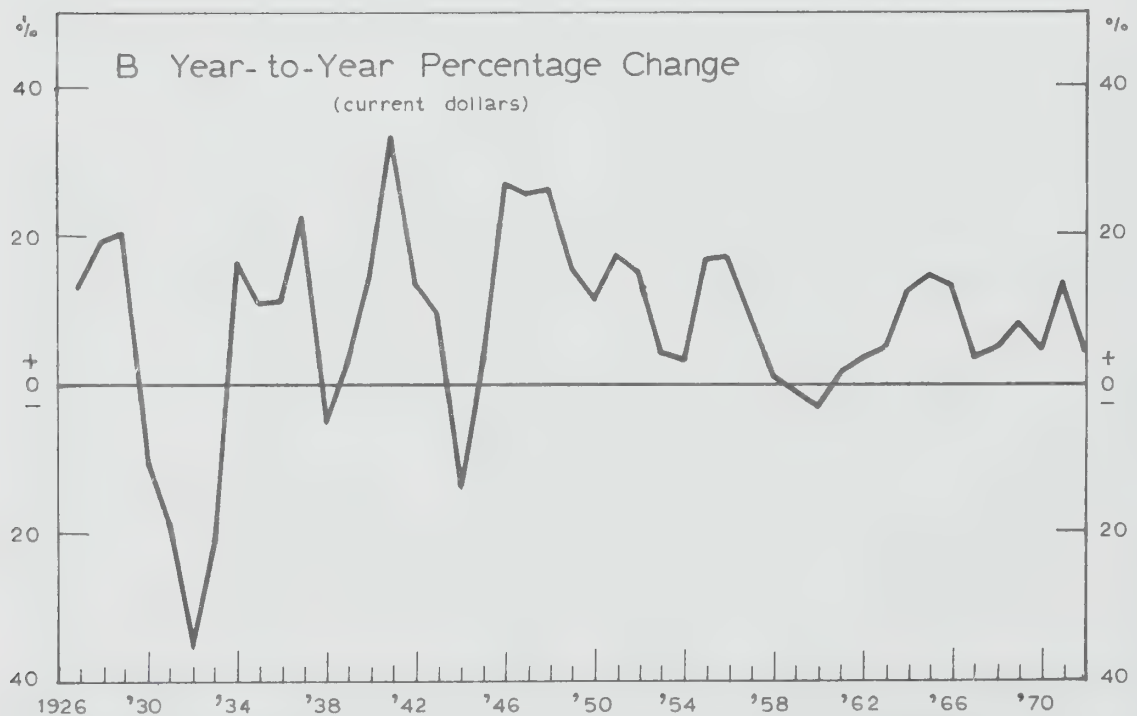
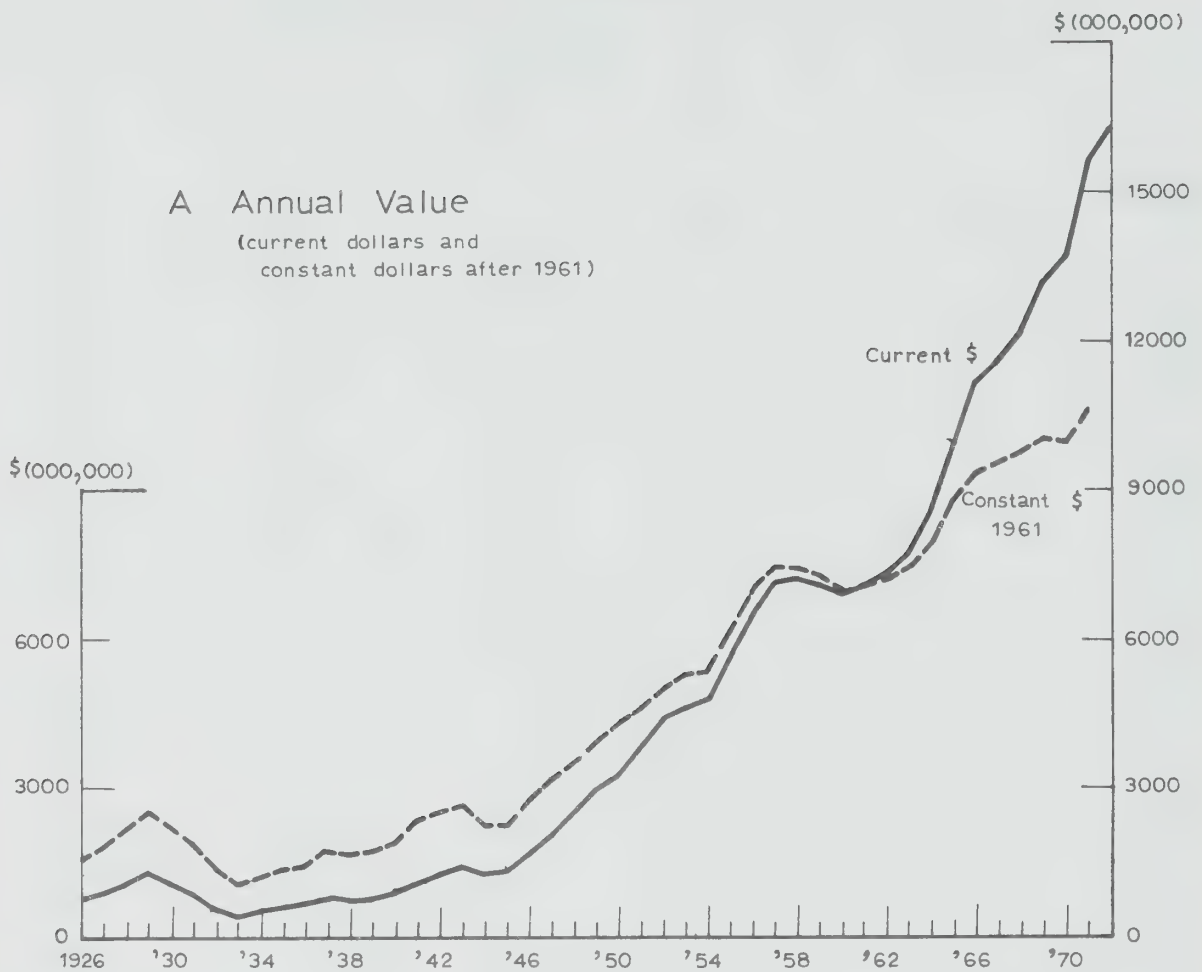
³These estimates of the annual value of construction were first made in 1946. They were continued annually and later extended back to 1926.

TABLE I
Total Construction Work Performed, Estimated Annual Value,
Year-to-Year Percentage Change and Annual Index, Canada, 1926-1972.

Year	Estimated Annual Value Current \$ (000,000,000)	Year-to-Year Change %	Annual Index (1961 = 100)
1926	0.80	—	11.4
1927	0.92	13.2	12.9
1928	1.09	19.4	15.4
1929	1.29	10.4	17.0
1930	1.08	-10.6	15.2
1931	0.87	-19.1	12.3
1932	0.56	-35.8	7.9
1933	0.44	-21.5	6.2
1934	0.51	16.1	7.2
1935	0.57	11.1	8.0
1936	0.63	11.3	8.9
1937	0.77	22.5	10.9
1938	0.73	-5.5	10.3
1939	0.75	2.9	10.6
1940	0.86	14.2	12.1
1941	1.14	33.1	16.1
1942	1.30	13.7	18.3
1943	1.42	9.3	20.0
1944	1.22	-14.0	17.2
1945	1.26	3.5	17.8
1946	1.60	27.0	22.6
1947	2.01	25.7	28.4
1948	2.54	26.1	35.8
1949	2.93	15.6	41.4
1950	3.28	11.8	46.3
1951	3.86	17.5	54.4
1952	4.44	15.3	62.7
1953	4.63	4.3	65.4
1954	4.80	3.7	67.8
1955	5.60	16.5	79.0
1956	6.54	16.8	92.3
1957	7.12	8.9	100.5
1958	7.21	1.3	101.8
1959	7.16	-0.8	101.0
1960	6.95	-2.9	98.1
1961	7.09	1.9	100.0
1962	7.34	3.6	103.6
1963	7.72	5.1	108.9
1964	8.66	12.2	122.2
1965	9.93	14.6	140.1
1966	11.24	13.1	158.5
1967	11.62	3.5	164.0
1968	12.21	5.1	172.3
1969	13.20	8.1	186.3
1970	13.78	4.4	194.5
1971	15.65	13.5	220.8
1972	16.34	4.4	230.6

Source: *Construction in Canada and Historical Statistics of Canada*, M. C. Urquhart and K.A.H. Buckley, p. 503. Statistics Canada.

Figure 1
ESTIMATED VALUE TOTAL CONSTRUCTION
WORK PERFORMED, CANADA,
1926-1972



SOURCE: Construction in Canada, Statistics Canada and Historical Statistics of Canada, M.C. Urquhart and K.A.H. Buckley, p. 503

of new construction has exceeded that of the previous year by over 10 per cent and another seven years in which the increase has exceeded five per cent. The average year-to-year change was 8.2 per cent.⁴ In non-durable manufacturing, on the other hand, the year-to-year change has ranged between 1.3 in 1967 and 8.2 per cent in 1956 and in only nine years has it exceeded five per cent with an average year-to-year change over the 26 years of 4.4 per cent. Similarly the average year-to-year changes were 4.9 and 5.2 respectively in services and trade, with the highest year not exceeding 9.7 per cent in the case of services in 1946, and 11.4 per cent in the case of trade in 1955. In durable manufacturing which is more directly affected by fluctuations in investment and construction activity the year-to-year changes have ranged from a low of -3.6 in 1954 to a high of 16.7 in 1947 with an average over the 26 years of 6.5 per cent.⁵

Since 1926 estimates of annual expenditures on new construction in residential and non-residential categories have been calculated by Statistics Canada as part of National Accounts. These data, set forth in Figure 2 and in Table II, do not include repair construction, as do those already presented covering the value of total construction work performed in the annual "Construction in Canada" series also going back to 1926.⁶ The trend lines in Figure 2 each follow a generally similar pattern to that for the value of total construction in Figure 1 up to 1955. Since that year new non-residential construction has increased at a more rapid rate than new residential construction.

The thinner lines in Figure 2 portray the trends in constant 1961 dollars. While subject to inherent measurement limitations⁷ these adjusted trends illustrate dramatically the sharp effect of inflation, particularly since 1965. They also provide a closer approximation of the actual changes in the volume of construction activity over the period.

The year-to-year percentage changes in the estimated expenditure on new construction in Canada over the same period 1926-1971, are presented in the top portion A of Figure 3. Both year-to-year and longer-run fluctuations for all new construction show up more prominently in this figure than those for the estimated value of total construction shown in Figure 1. Even expenditures on new

⁴When repairs and maintenance are included in the annual value of construction figures, as in Table I, the range in the year-to-year variations is still wider, namely from a low of -2.9 per cent in 1960 to a high of 27 per cent in 1946. Using these more complete value data there were, moreover, 13 years or half of the total in which the year-to-year change exceeded 10 per cent. The average year-to-year change in all 26 years amounted to 10.7 per cent.

⁵Cf. *Indexes of Real Domestic Product by Industry*, 61,506 and 61,510 and *Canadian Statistical Review*, 11-003, August 1972, p. 28. "Services" as used in the text cover "total community, business and personal".

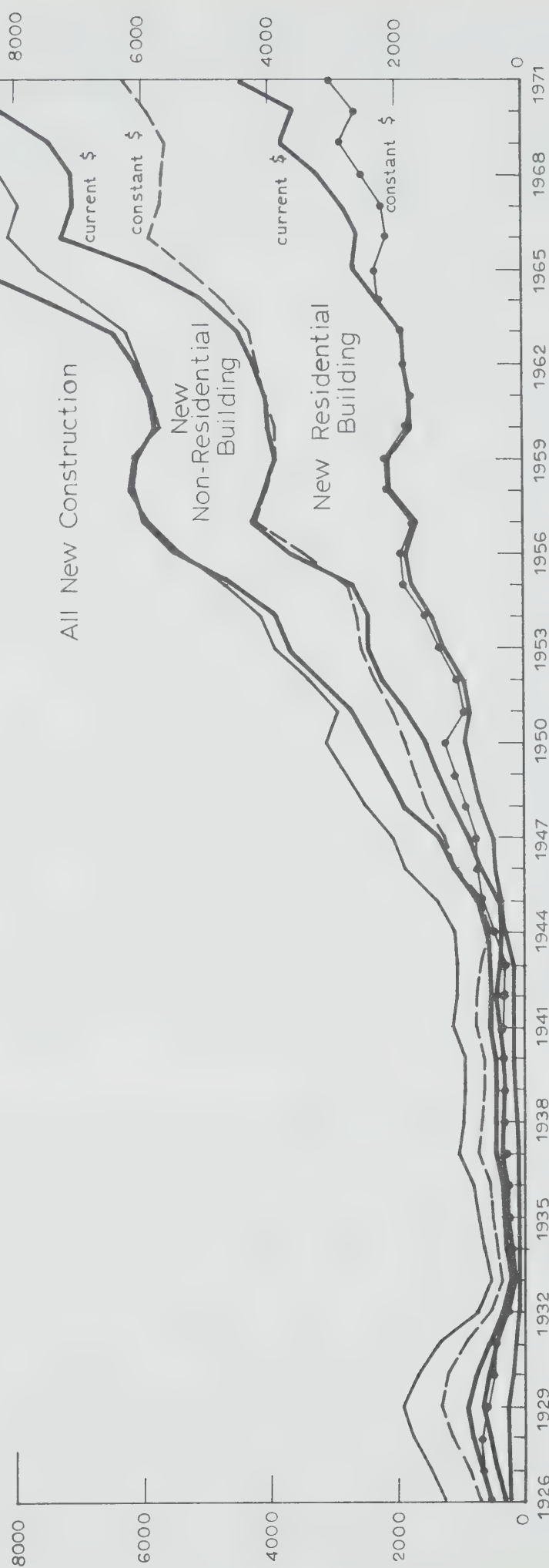
⁶The estimates covering new construction in both series are from the same source namely the Annual Capital and Repair Expenditures Survey. The National Accounts data include an additional item namely "transfer costs on the sales and purchases of existing fixed assets". This latter item, which covers related land and machinery as well as the structures themselves, amounted to \$23,000,000 in 1926, to \$55,000,000 in 1946 and to approximately \$600,000,000 in 1969, or around four to five per cent of the total. Aside from this relatively small amount, other related expenditures on land and machinery are not included in the estimates of construction activity in either the Annual Construction Survey series or in the National Accounts.

⁷The Gross National Expenditure price deflator used here and in Figure 1 has been developed by Statistics Canada. Price deflators for construction expenditure and value series remain subject to imperfections and their use provides only an approximate measurement. Cf. *Canadian Statistical Review*, 11-003, November 1970, p. 4.

Figure 2

ESTIMATED ANNUAL EXPENDITURES: NEW RESIDENTIAL,
NEW NON-RESIDENTIAL AND ALL NEW
CONSTRUCTION WORK,
CANADA, 1926-1971

\$(000,000)



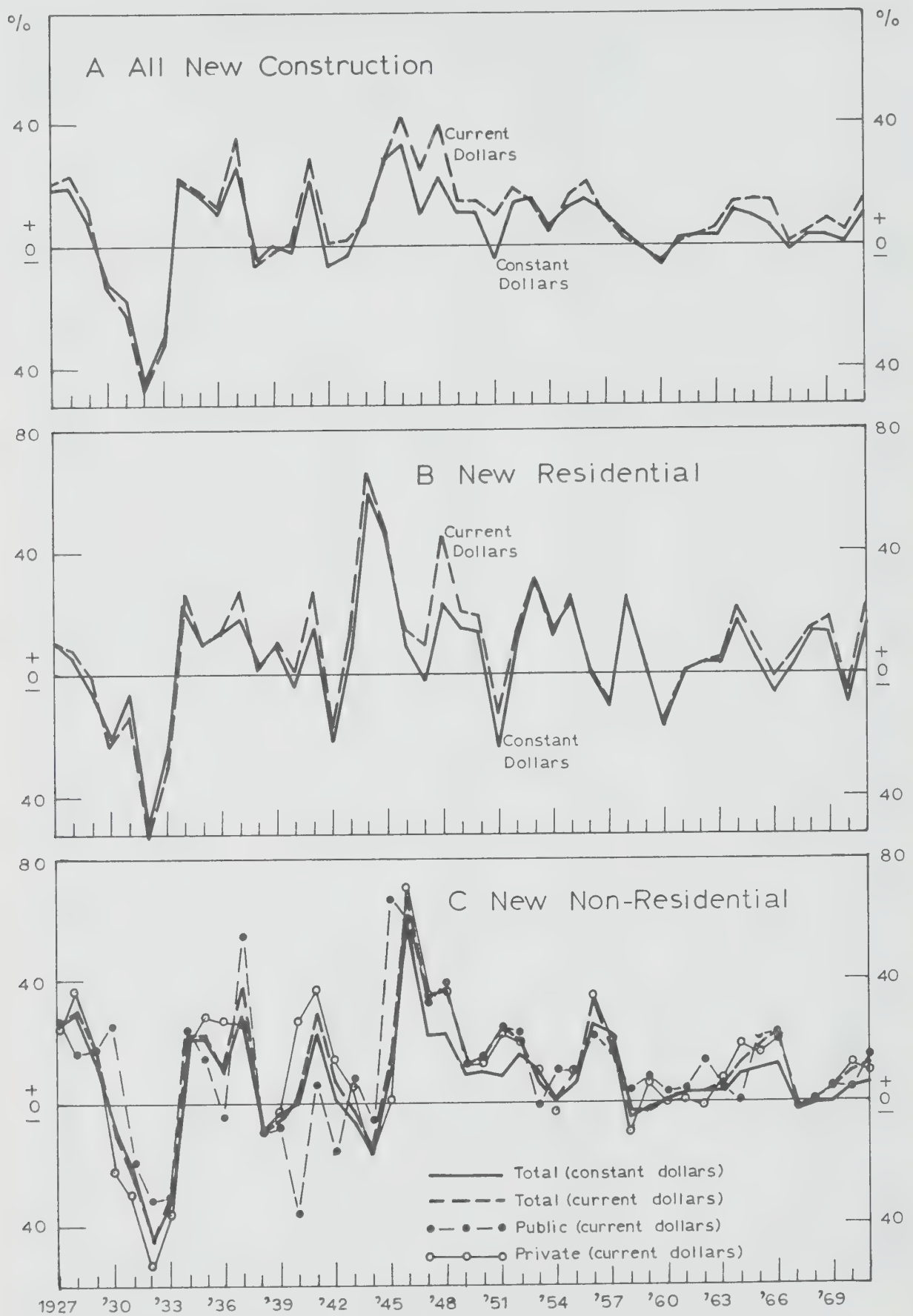
SOURCE: National Accounts, Statistics Canada

TABLE II
Estimated Annual Expenditures on New Residential,
New Non-Residential and All New Construction,
Canada, 1926 – 1971.
\$ (000,000,000)

Year	New Residential Current \$	New Non-Residential			All New Construction Current \$
		Public	Private	Total	
1926	0.21	0.09	0.24	0.33	0.54
1927	0.23	0.12	0.30	0.42	0.65
1928	0.25	0.14	0.42	0.56	0.81
1929	0.25	0.16	0.49	0.65	0.90
1930	0.19	0.20	0.38	0.58	0.77
1931	0.16	0.16	0.27	0.43	0.59
1932	0.08	0.11	0.12	0.23	0.31
1933	0.05	0.07	0.08	0.15	0.20
1934	0.08	0.09	0.09	0.18	0.26
1935	0.07	0.10	0.12	0.22	0.29
1936	0.08	0.10	0.15	0.25	0.33
1937	0.11	0.15	0.19	0.34	0.45
1938	0.11	0.14	0.17	0.31	0.42
1939	0.12	0.12	0.17	0.29	0.41
1940	0.12	0.08	0.21	0.29	0.41
1941	0.16	0.08	0.29	0.37	0.53
1942	0.13	0.07	0.33	0.40	0.53
1943	0.15	0.08	0.31	0.39	0.54
1944	0.25	0.07	0.26	0.33	0.58
1945	0.36	0.12	0.26	0.38	0.74
1946	0.42	0.19	0.45	0.64	1.06
1947	0.46	0.25	0.61	0.86	1.32
1948	0.66	0.35	0.83	1.18	1.84
1949	0.80	0.40	0.93	1.33	2.13
1950	0.96	0.46	1.05	1.51	2.46
1951	0.84	0.57	1.30	1.87	2.71
1952	0.95	0.71	1.57	2.28	3.23
1953	1.25	0.70	1.75	2.45	3.70
1954	1.41	0.78	1.68	2.46	3.87
1955	1.79	0.86	1.86	2.72	4.51
1956	1.82	1.04	2.59	3.63	5.45
1957	1.67	1.21	3.10	4.31	5.98
1958	2.09	1.26	2.81	4.07	6.16
1959	2.14	1.36	2.60	3.96	6.10
1960	1.80	1.42	2.59	4.01	5.81
1961	1.80	1.48	2.61	4.09	5.89
1962	1.86	1.68	2.57	4.25	6.11
1963	1.97	1.76	2.76	4.52	6.48
1964	2.39	1.77	3.30	5.07	7.46
1965	2.64	2.15	3.84	5.99	8.63
1966	2.62	2.65	4.66	7.31	9.93
1967	2.82	2.58	4.55	7.13	9.95
1968	3.27	2.59	4.55	7.14	10.41
1969	3.86	2.70	4.77	7.47	11.34
1970	3.62	2.82	5.38	8.20	11.83
1971	4.46	3.27	5.93	9.20	13.66

Source: *National Accounts*, Statistics Canada.

Figure 3
 YEAR-TO-YEAR PERCENTAGE CHANGES ALL
 EXPENDITURES NEW CONSTRUCTION
 CANADA, 1927-1971



SOURCE: National Accounts, Statistics Canada

construction expressed in 1961 constant dollars, which represent, as already noted, a better indication of physical volume of activity, reveal year-to-year fluctuations throughout most of the three decades as sharp as in Figure 1. This is partly due, of course, to the fact that the latter includes repair construction which tends over time to follow a more even path.

The year-to-year fluctuations become even more pronounced in the case of new residential and new non-residential construction shown in B and C of Figure 3. In C estimated expenditures for public and private construction are also shown separately. It will be noted that, with few exceptions, the year-to-year changes have occurred simultaneously in each group of expenditures. Comparing non-residential expenditures as a whole in Figure 3C with those for residential construction in Figure 3B it is clear that the expansion of operations in one has served to offset the contraction of operations in the other in some years, for example in 1955 and 1970. More frequently, however, both sets of construction expenditures moved in the same direction. This was particularly noticeable in 1956, 1962, 1964 and 1966.

In the absence of any deliberate overall attempt to achieve more balanced annual construction operations one might expect the substantial variations in non-residential expenditures to continue from year to year. Many major projects falling in this category are of a one-time nature. Moreover, when economic conditions are favorable for some types of such construction they are likely to be favorable for all. The wide fluctuations that show up in Figure 3C are thus not too surprising. The situation is different in the case of residential construction. Particularly during recent years when public financing has become an important factor in home building and acquisition one might look for greater stability from year to year in this area. Housing construction has of course also been subject to changing economic conditions but the expanding requirements for homes have tended to follow a fairly steady pattern in line with the creation of new Canadian families.⁸ The erratic nature of residential construction expenditures over the years, therefore, clearly suggests that some other influences have been at work as well as the availability of public financing and gradually expanding housing needs.

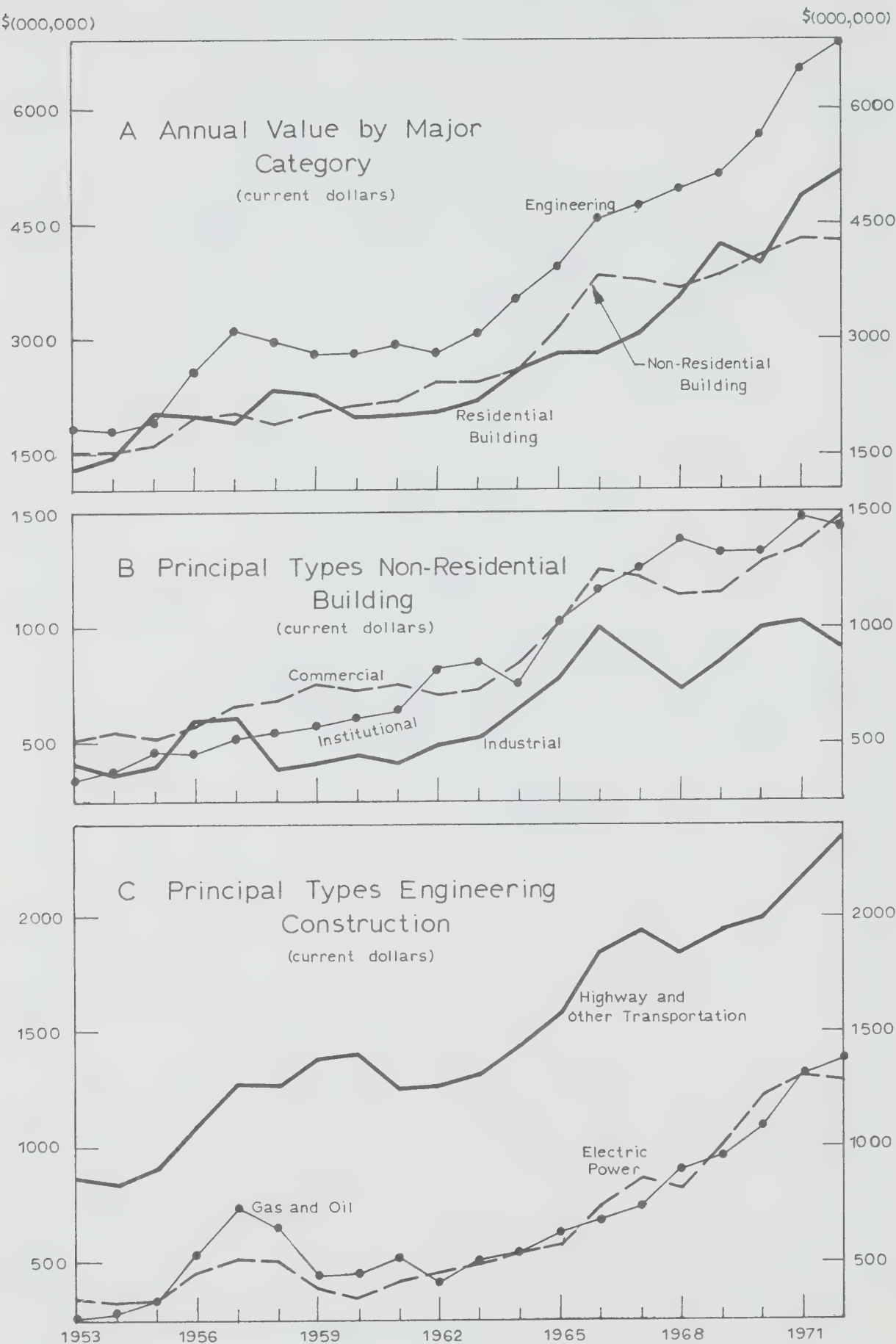
Fortunately, as an aid in making more refined analyses, the estimated value of total construction work performed in Canada as a whole, derived from the annual survey of construction, began to be broken down further in 1953 into three major categories. These are residential building, non-residential building and engineering construction. The data in each case covering the 20 years from 1953 to 1972 are presented in Figure 4A. They will also be found in Table III.

Construction work performed in each of these categories had an annual value in 1953 and in 1954 of under two billion dollars. Engineering construction and residential building have increased in the meantime to annual levels of 6.9 and 5.2 billion dollars respectively. Non-residential building has increased least rapidly over the two decades reaching an annual estimated value in 1972 of 4.3 billion dollars.

It is also possible beginning in 1953 to trace the estimated annual levels of work performed, again in value terms, for each of the principal types of non-residential

⁸ The census count of the number of families in Canada increased from 4,143,000 in 1961 to 5,071,000 in 1971. In recent years the annual increase has fallen off somewhat but over the decade it has been around 90,000 per year.

Figure 4
ESTIMATED VALUE TOTAL CONSTRUCTION WORK
PERFORMED, CANADA, 1953-1972



SOURCE: Construction in Canada, Statistics Canada

TABLE III
Estimated Annual Value Total Construction Work Performed by Major Categories and Types
Canada, 1953-1972
\$ (000,000,000)

Year	BUILDING			ENGINEERING				Total ^d	TOTAL CONSTRUC- TION	
	Resi- dential	Non-Residential		Total ^b	Highway & Other Trans- portation ^c	Electric Power	Gas & Oil			
		Indus- trial	Commer- cial							Institu- tional ^a
1953	1.29	0.40	0.50	0.34	1.51	0.86	0.34	0.25	1.83	4.63
1954	1.48	0.36	0.55	0.38	1.51	0.84	0.32	0.27	1.81	4.80
1955	2.02	0.40	0.51	0.46	1.64	0.91	0.34	0.34	1.93	5.59
1956	1.99	0.60	0.57	0.46	1.99	1.10	0.46	0.53	2.56	6.54
1957	1.91	0.61	0.66	0.52	2.07	1.27	0.51	0.74	3.14	7.12
1958	2.31	0.40	0.69	0.55	1.91	1.27	0.50	0.65	2.99	7.21
1959	2.26	0.42	0.76	0.57	2.06	1.38	0.40	0.46	2.84	7.16
1960	1.98	0.45	0.74	0.62	2.14	1.40	0.35	0.45	2.83	6.95
1961	1.98	0.41	0.75	0.65	2.19	1.26	0.41	0.52	2.92	7.09
1962	2.07	0.49	0.72	0.83	2.44	1.26	0.46	0.42	2.83	7.34
1963	2.20	0.54	0.74	0.86	2.44	1.31	0.49	0.50	3.08	7.72
1964	2.57	0.67	0.85	0.76	2.57	1.44	0.54	0.55	3.52	8.66
1965	2.84	0.78	1.02	1.02	3.15	1.58	0.58	0.63	3.94	9.93
1966	2.84	1.00	1.25	1.17	3.82	1.84	0.74	0.69	4.58	11.24
1967	3.09	0.87	1.22	1.26	3.76	1.94	0.86	0.74	4.77	11.62
1968	3.59	0.74	1.15	1.38	3.67	1.84	0.82	0.90	4.95	12.21
1969	4.23	0.87	1.15	1.33	3.83	1.95	1.00	0.97	5.15	13.21
1970	4.01	1.00	1.29	1.33	4.09	1.99	1.22	1.09	5.68	13.78
1971	4.83	1.03	1.34	1.47	4.32	2.18	1.31	1.30	6.50	15.65
1972 ^e	5.18	0.91	1.48	1.45	4.29	2.35	1.28	1.38	6.87	16.34

a. Includes government buildings.
b. Includes, in addition to industrial, commercial and institutional building, farm buildings, broadcasting and miscellaneous building.
c. Includes roads, streets, highways, airports, marine, railways, telephones and telegraphs.
d. Includes, in addition to highways and other transportation, electric power and gas and oil, waterworks, sewage systems, dams, irrigation, bridges, mine shafts, and other engineering structures.
e. Intended expenditures.
N.B. Repair construction is included in all cases.
Source: *Construction in Canada*, 64-201, Statistics Canada.

building and engineering construction. The relevant data are set forth in Table III. They are also charted for non-residential building in Figure 4B and for engineering construction in Figure 4C. In the case of the former, the estimated value of work performed on industrial building measured in current dollars has been less in most of the years covered than that on either commercial or institutional building. Moreover, the latter two types have shown a more rapid annual increase particularly over recent years. It will be seen too that until the early 1960s commercial exceeded institutional building. Since then the reverse has been the case in most years, due in large part to the greatly expanded public outlays for education and health facilities.⁹

In engineering the most rapid increase in the level of annual construction over the two decades has been in gas and oil. In 1953 the estimated value of this type of construction work was \$250 million. In 1972 the annual level was estimated at \$1.4 billion, more than four times that of 20 years earlier. The increases in electric power, and highway and other transportation have also been substantial, with the total annual value of the latter structures running more than double that of each of the other two types of engineering construction throughout most of the period.

When the year-to-year percentage changes in the estimated value of total construction work performed on residential and non-residential buildings are charted they reveal once again sharp and erratic fluctuations. These will be observed in Figure 5A. There was relatively little tendency for any significant offsetting effects among the various types of building over the years covered, namely 1954-1972. Equally violent annual fluctuations in engineering construction are evident in Figure 5B.

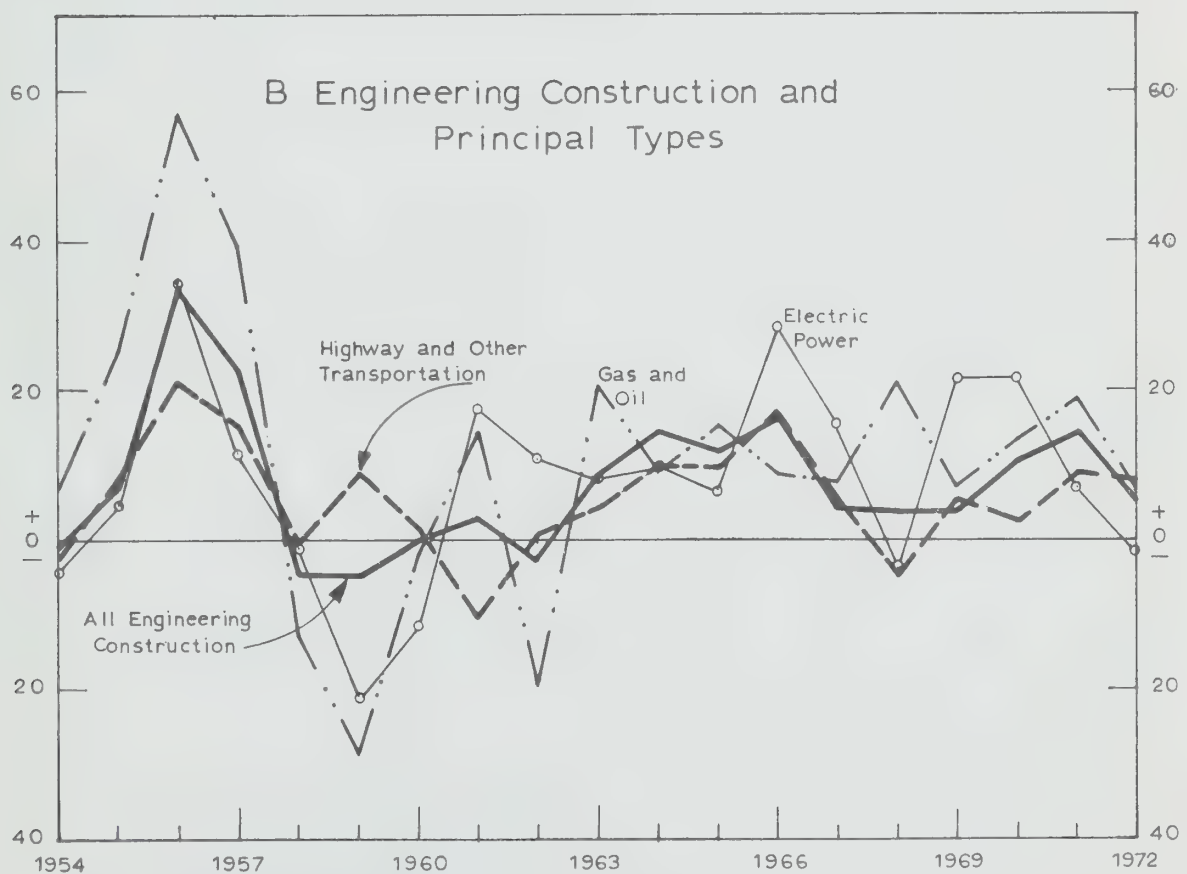
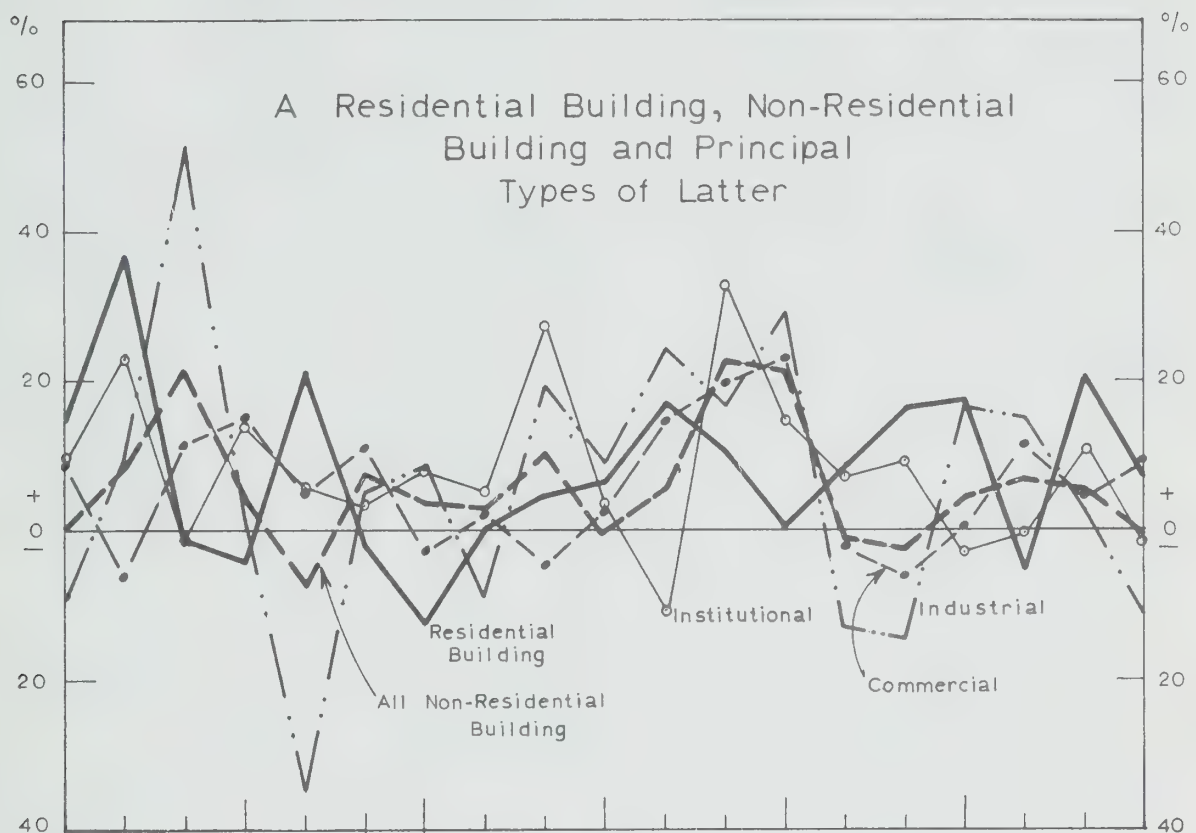
Regional and Provincial Patterns

Estimates of the annual value of total construction in each province have been compiled beginning in 1957 comparable to those already examined for Canada as a whole dating back to 1926. These provincial estimates summarized by region in Table IV and in Figure 6, indicate that throughout the 16 years covered, slightly more than one third of all construction work in Canada was performed in Ontario. Between one fifth and one quarter was undertaken in Quebec. Another fifth was located in the Prairie Region with the remaining fifth divided between British Columbia and the Atlantic Region on the basis in recent years of about three to two.

The most rapid increase in the annual level of construction work performed over the period occurred in the Atlantic Region with a 269 per cent rise. This was over twice the 127 per cent increase in Ontario. A sharp expansion occurred in Quebec in 1964 and 1965 stimulated largely by Expo 1967. A decline followed this upsurge

⁹In 1961 the estimated annual value of work performed on the construction of education facilities in Canada was \$361 million. By 1966 the annual total had risen to \$801 million. Since then the level has been maintained between \$890 million in 1970 and \$983 million in 1968. The comparable figures for hospitals were \$154 million in 1961, \$210 million in 1966 and rising to an estimated \$334 million in 1972. Cf. *Construction in Canada*, *op. cit.*

Figure 5
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION
 CANADA, 1954-1972



SOURCE: Construction in Canada, Statistics Canada

TABLE IV
Estimated Annual Value Total Construction Work Performed, Canada and Regions
1957 – 1972
\$ (000,000,000)

Region	Estimated Annual Value																Distribution by Region		Per-centage Increase
	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1957	1972	
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	%	%	1957 to 1972 %
Atlantic.....	0.43	0.45	0.52	0.56	0.57	0.60	0.59	0.64	0.74	0.89	0.93	1.00	1.12	1.28	1.40	1.58	6.0	8.1	9.7
Quebec	1.67	1.78	1.81	1.68	1.73	1.88	1.95	2.38	2.63	2.68	2.53	2.55	2.70	2.74	3.14	3.52	23.5	25.7	21.5
Ontario	2.54	2.63	2.42	2.35	2.33	2.43	2.62	2.81	3.25	3.81	3.99	4.31	4.64	4.91	5.48	5.76	35.7	33.0	35.2
Prairie	1.41	1.53	1.59	1.59	1.70	1.65	1.73	1.84	2.03	2.40	2.56	2.77	2.95	2.88	2.99	3.13	19.8	22.5	19.2
British Columbia	1.07	0.82	0.82	0.77	0.76	0.78	0.83	0.99	1.28	1.45	1.61	1.58	1.80	1.81	2.21	2.35	15.0	10.7	14.4
CANADA	7.12	7.21	7.16	6.95	7.09	7.34	7.72	8.66	9.93	11.23	11.62	12.21	13.21	13.62	15.22	16.34	100.0	100.0	100.0

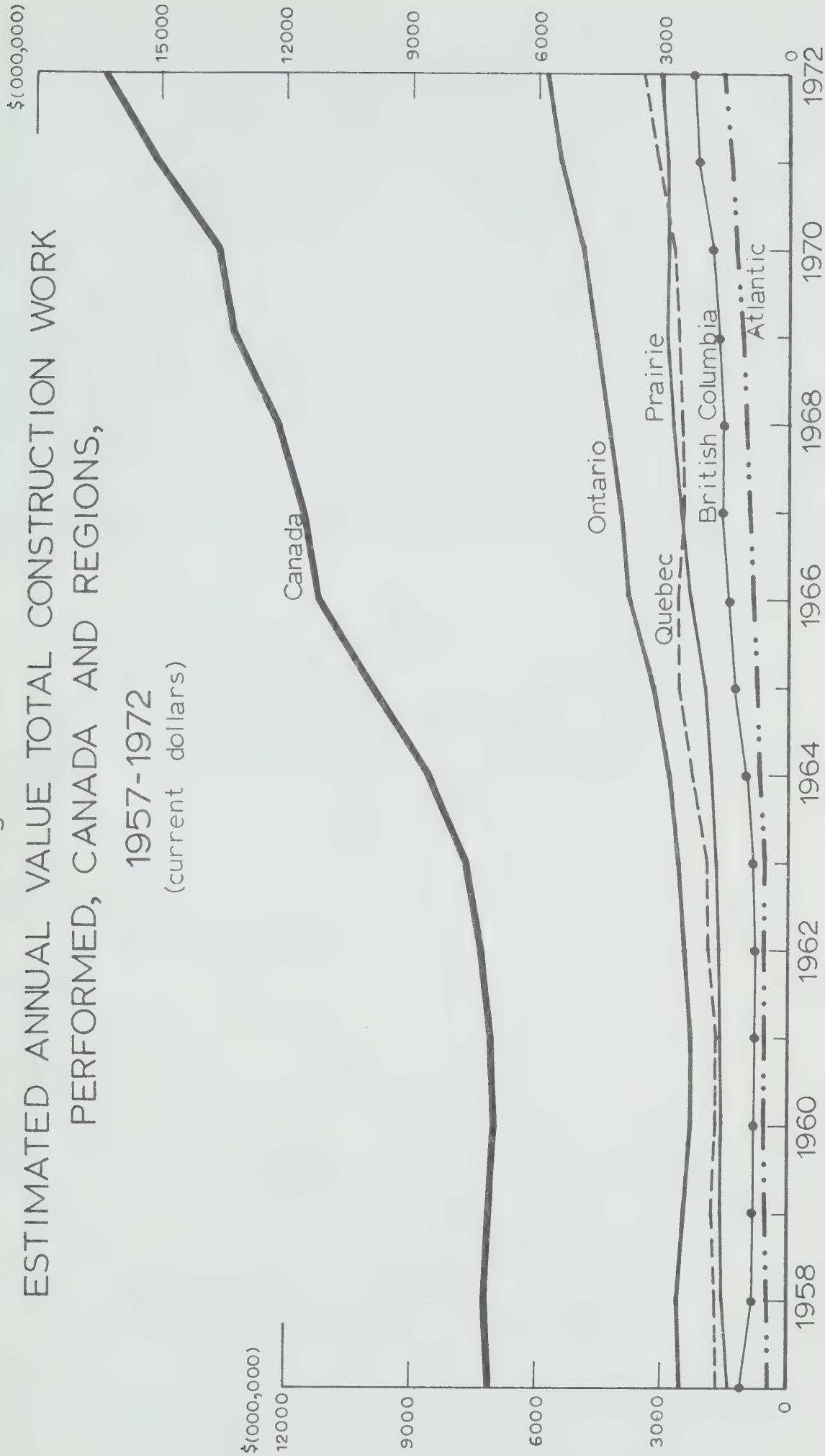
Source: *Construction in Canada*, 64-201, Statistics Canada.

Figure 6

ESTIMATED ANNUAL VALUE TOTAL CONSTRUCTION WORK
PERFORMED, CANADA AND REGIONS,

1957-1972

(current dollars)

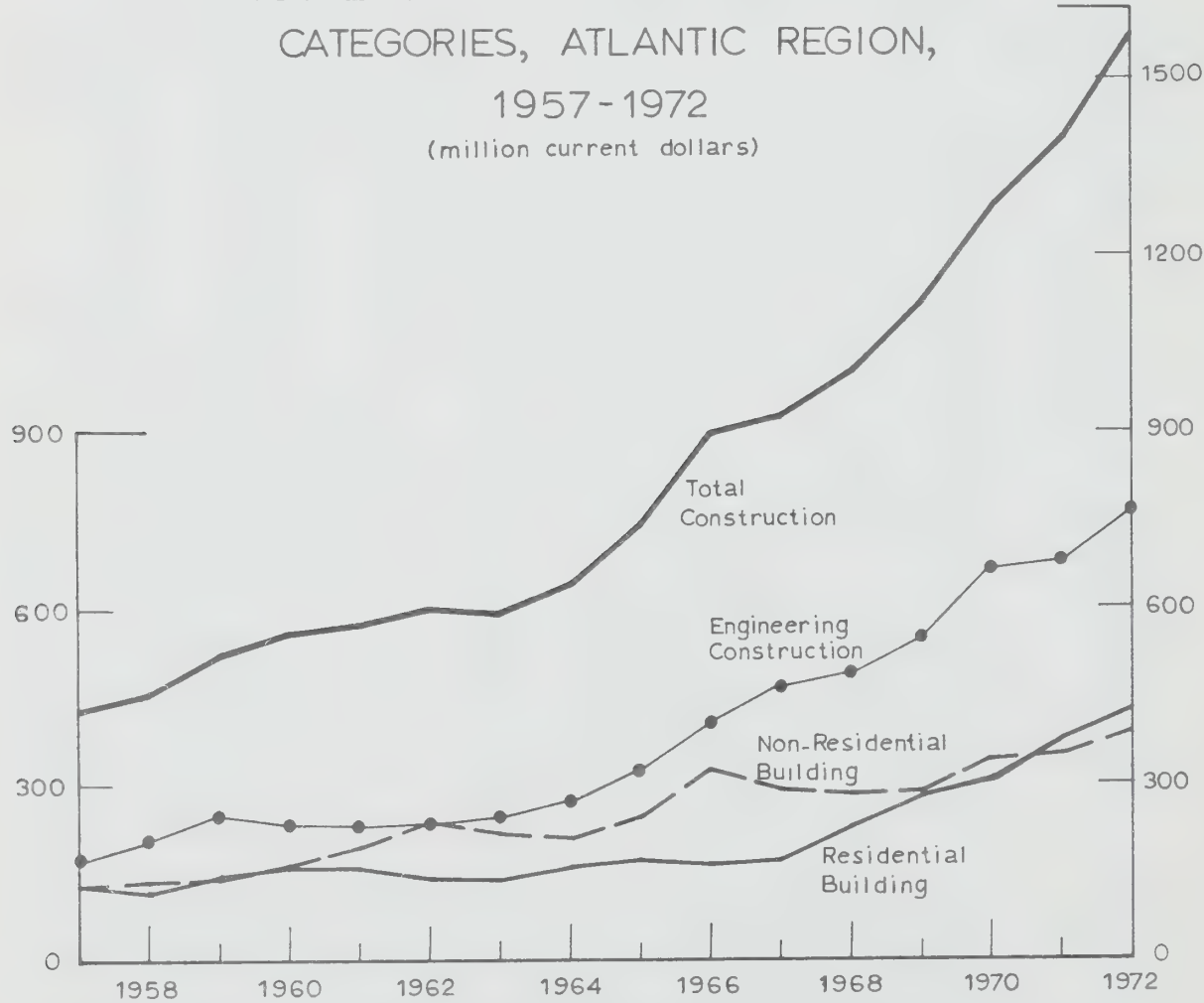


SOURCE: Construction in Canada, Statistics Canada

so that over the period as a whole, Quebec showed an increase of 110 per cent, the lowest among the regions. The Prairie Region and British Columbia, had gains of 123 and 120 per cent respectively. In these regions as in Quebec the increase was lower than that of 130 per cent for Canada as a whole. Meanwhile striking differences in the rate of construction over the period occurred among the provinces within the Atlantic and Prairie Regions. Newfoundland and Prince Edward Island showed the largest gains with 540 and 319 per cent respectively over the 16 years from 1957 to 1972. They were followed by Nova Scotia, Alberta and Manitoba with gains of 210, 155 and 129 per cent respectively. The lowest increases occurred in New Brunswick with 95 per cent and Saskatchewan with 52 per cent both of which were below the 110 per cent rise already noted in Quebec.

The annual estimates of the value of work performed in total construction in each of the three major categories, namely residential building, non-residential building and engineering structures are presented for the Atlantic Region in Figure 7 beginning in 1957. The same annual estimates are charted for each of the four Atlantic provinces in Figure 8, for Quebec and Ontario in Figure 9, for the Prairie Region in Figure 10, for each of the three Prairie provinces in Figure 11 and for British Columbia in Figure 12.

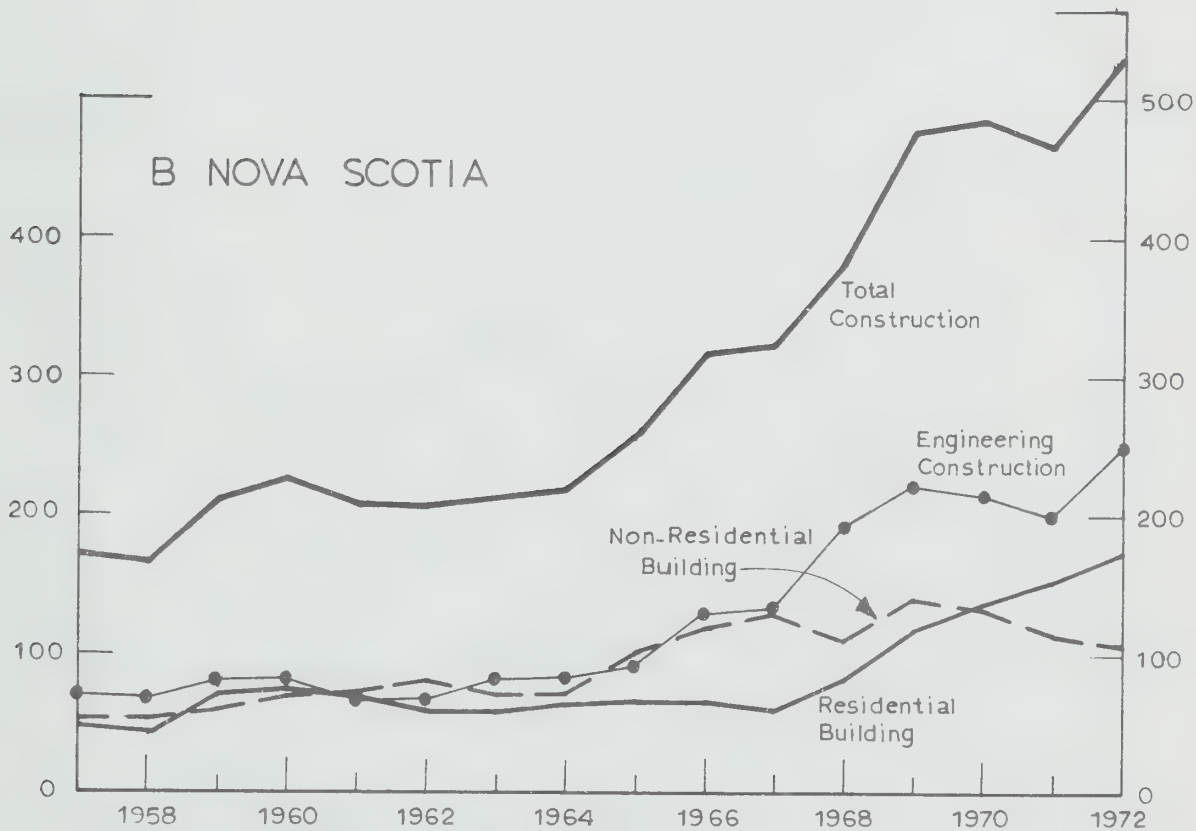
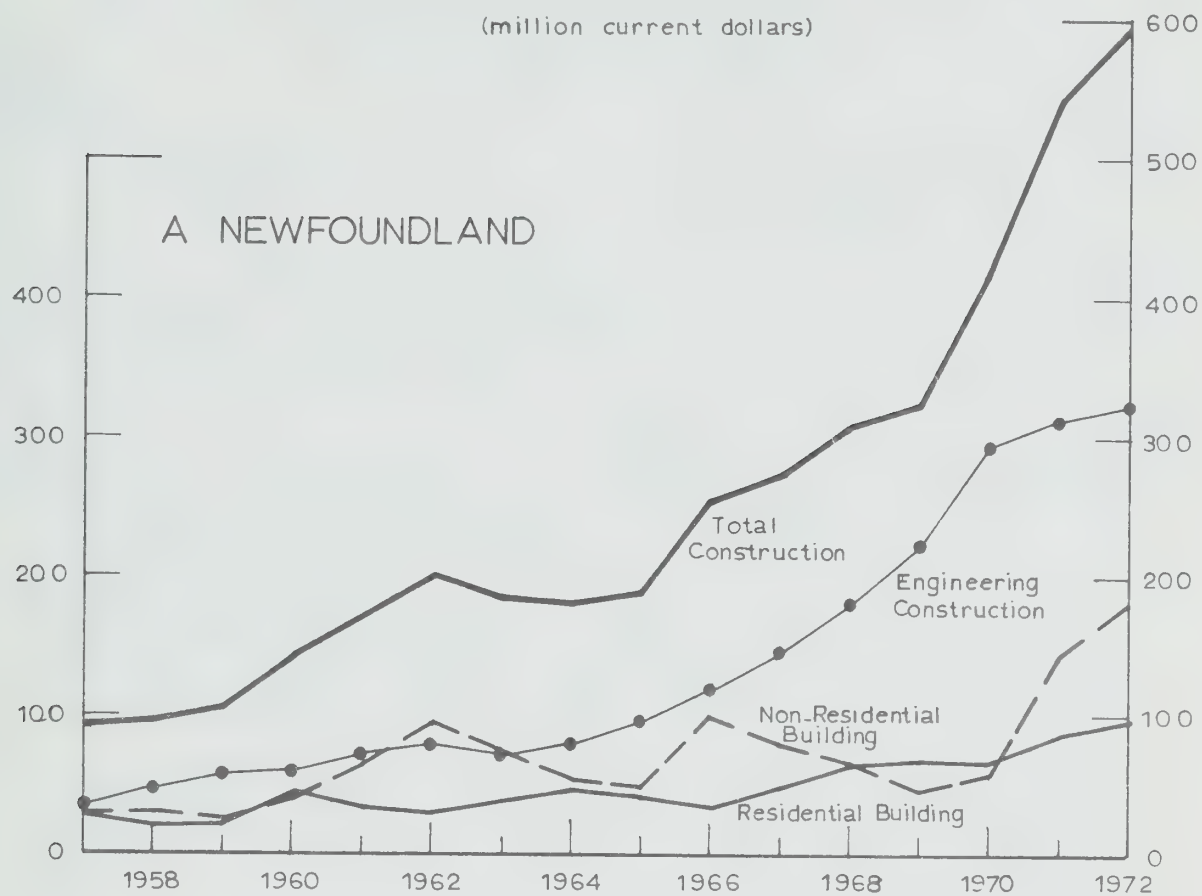
Figure 7
ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, ATLANTIC REGION,
1957-1972
(million current dollars)



SOURCE: Construction in Canada, Statistics Canada

Figure 8
ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, 1957-1972

(million current dollars)



SOURCE: Construction in Canada, Statistics Canada

Figure 8 continued

ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, 1957-1972

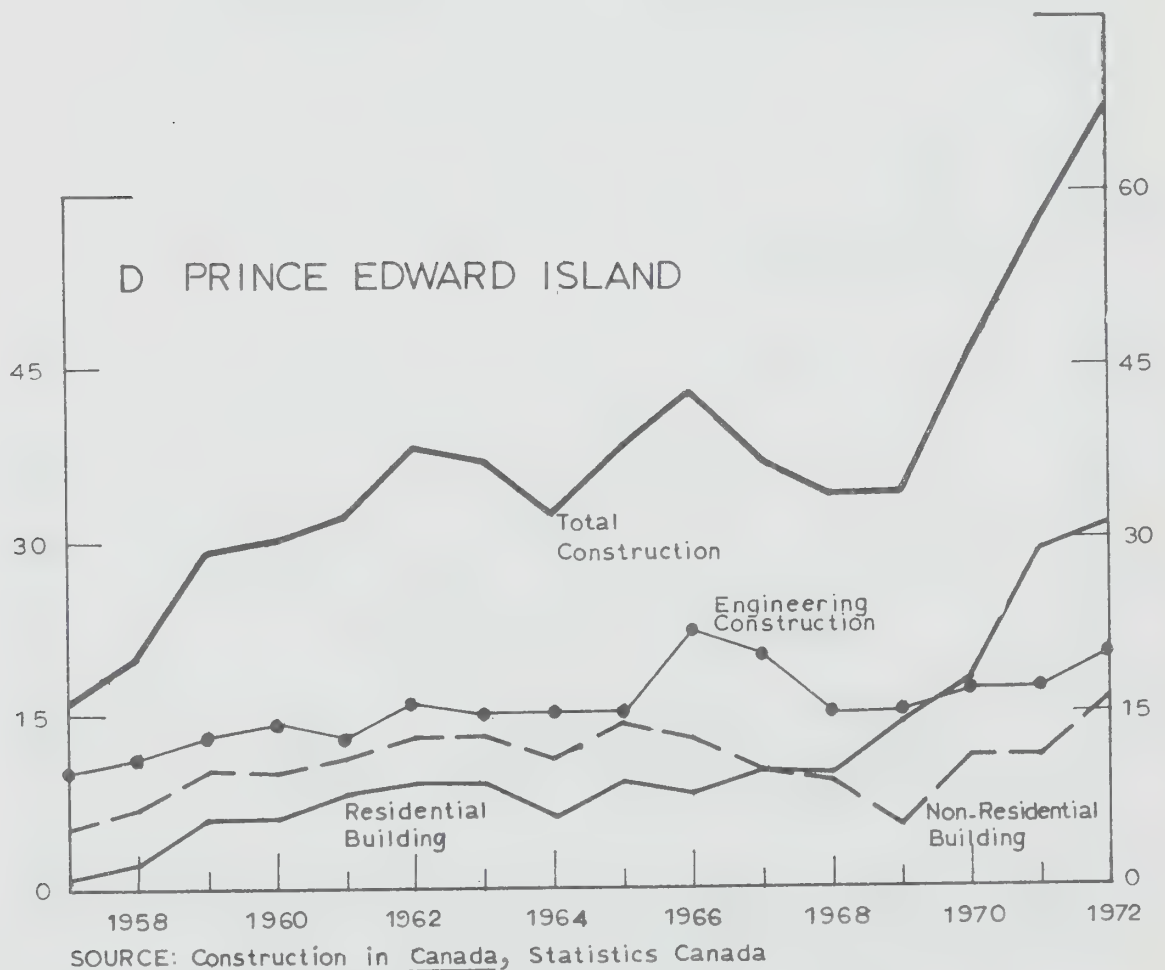
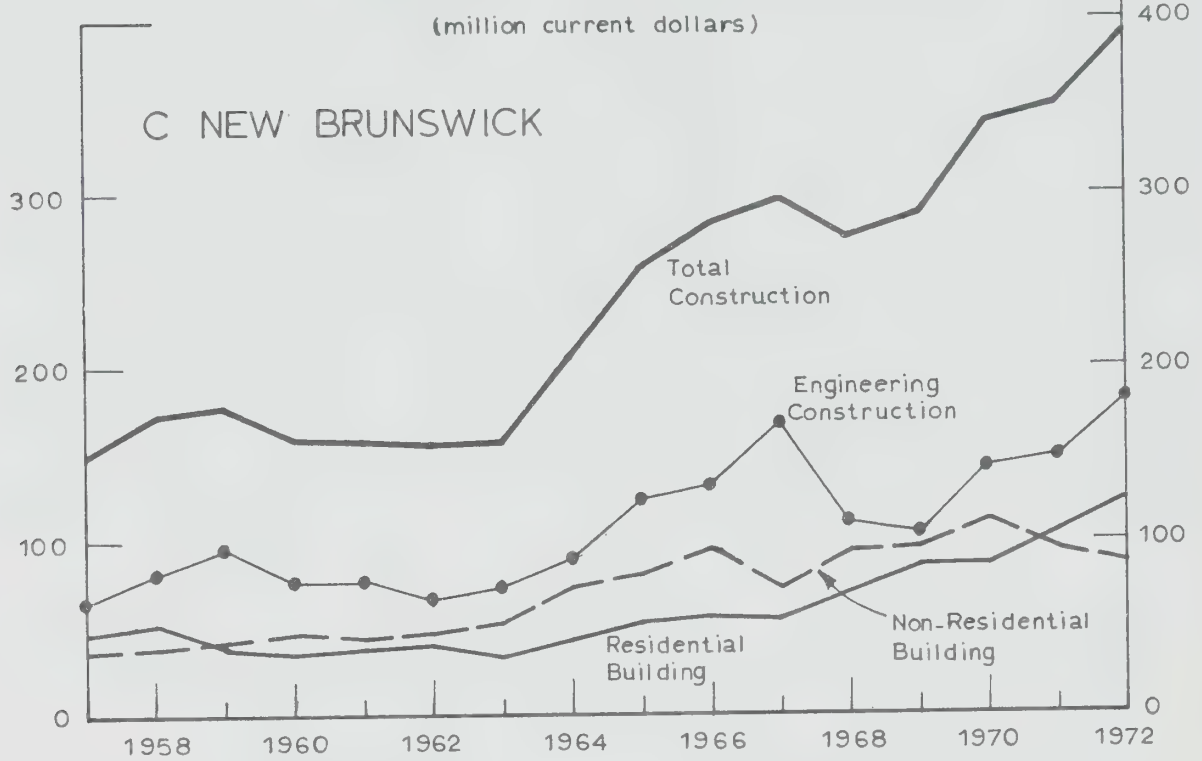
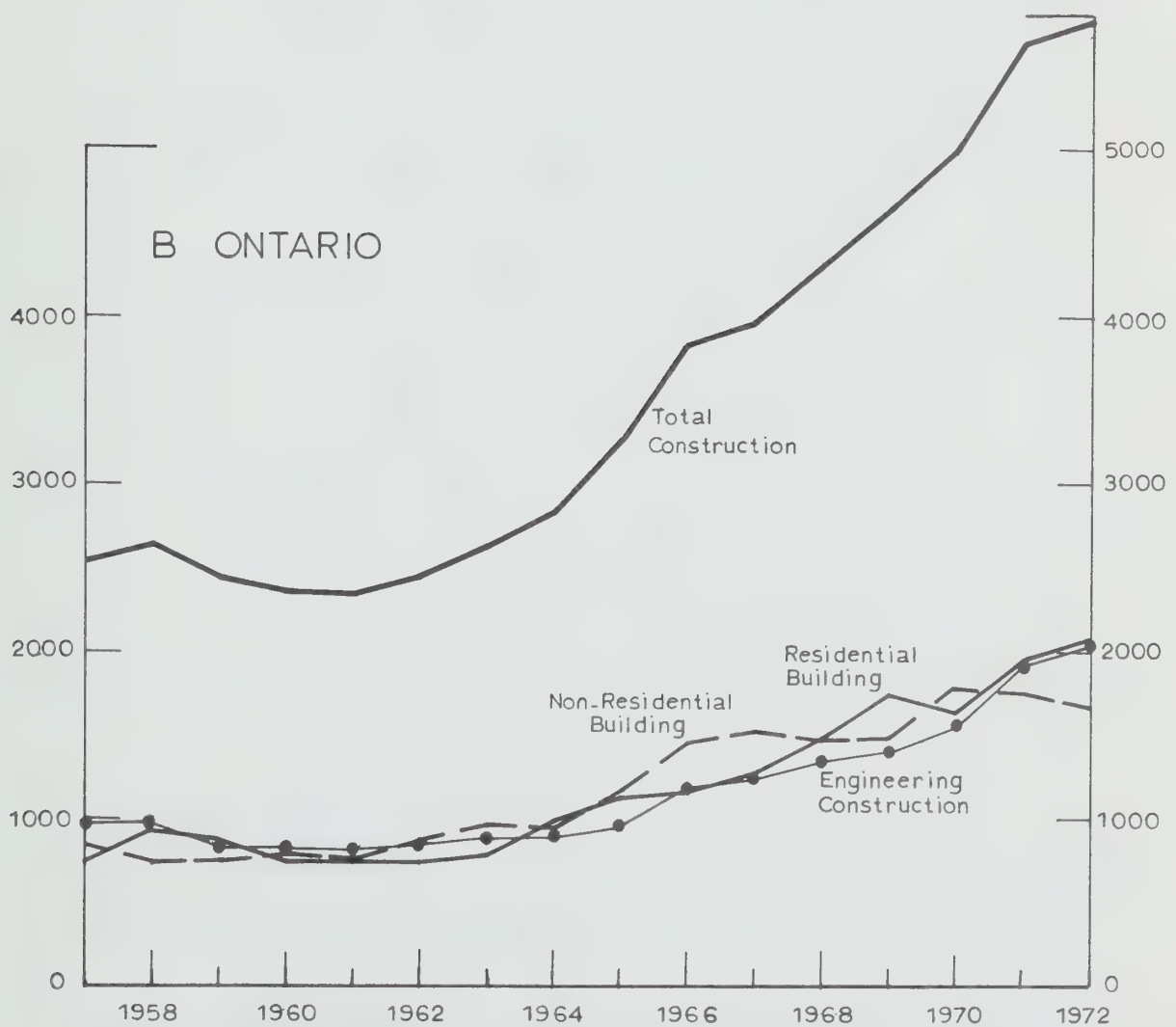
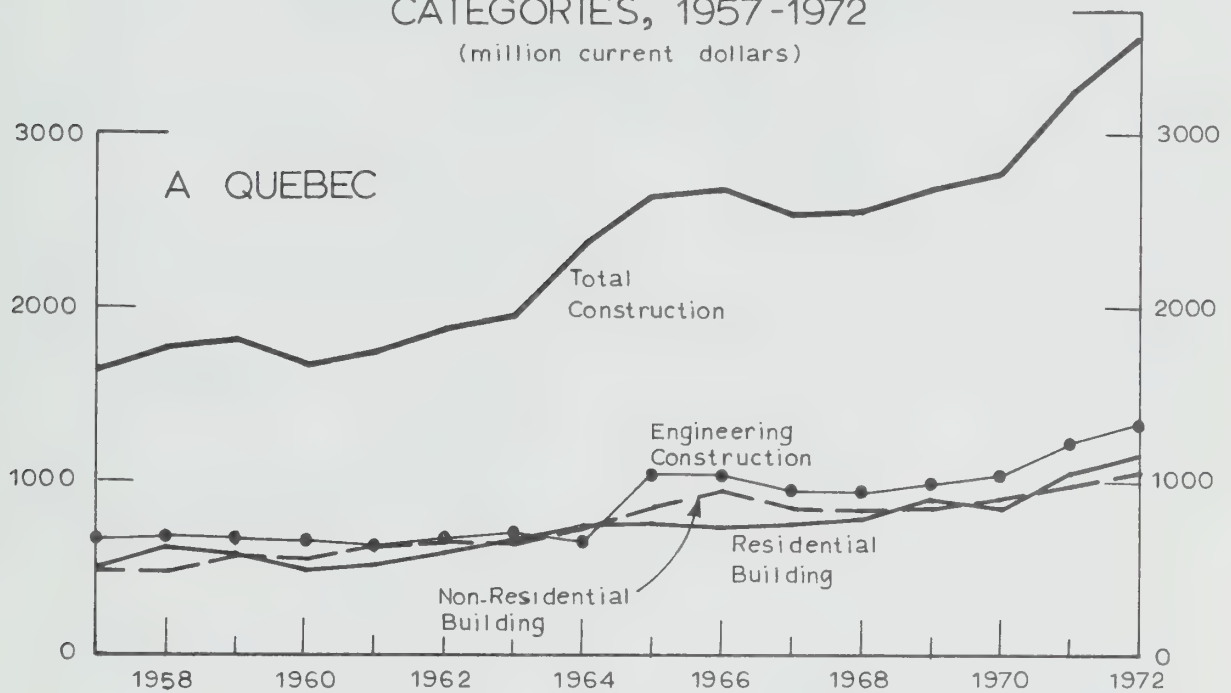


Figure 9
ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, 1957-1972
(million current dollars)



SOURCE: Construction in Canada, Statistics Canada

Figure 10
ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, PRAIRIE REGION

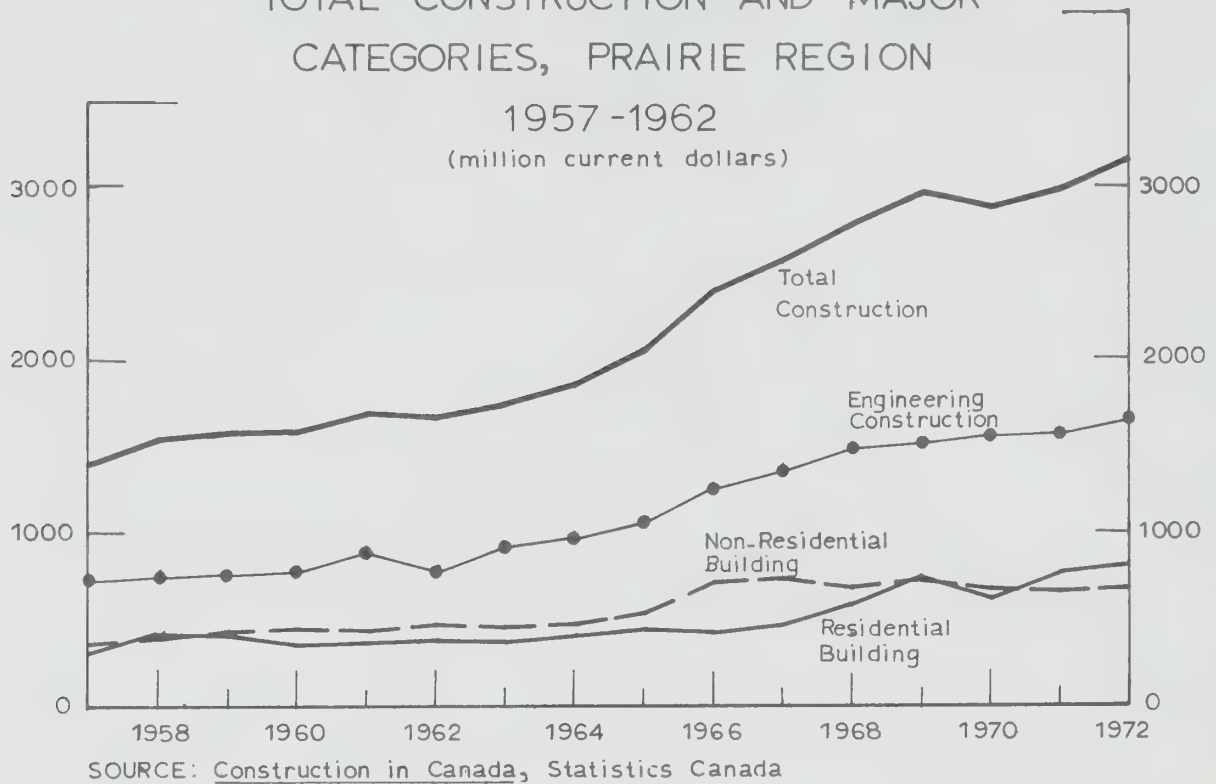


Figure 11
ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, 1957-1972
(million current dollars)

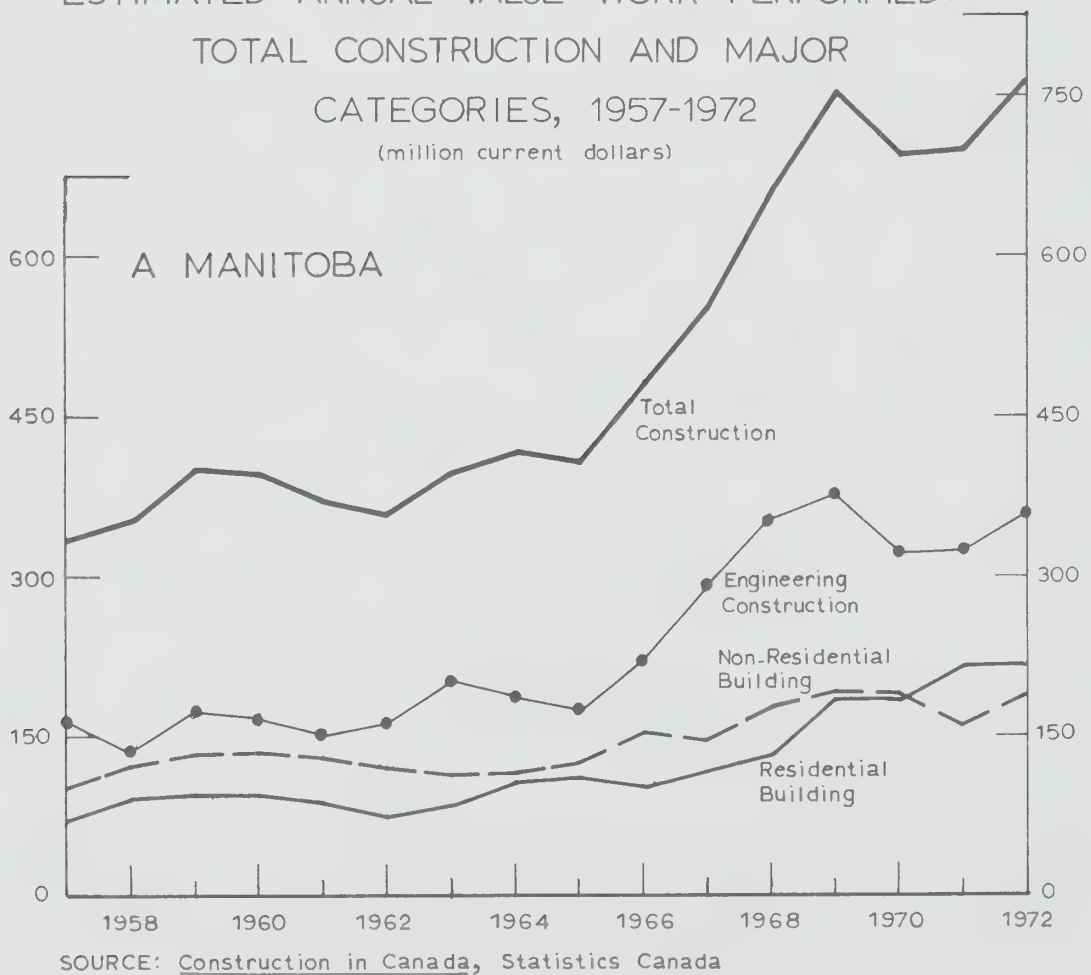


Figure 11 continued

ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, 1957-1972

(million current dollars)

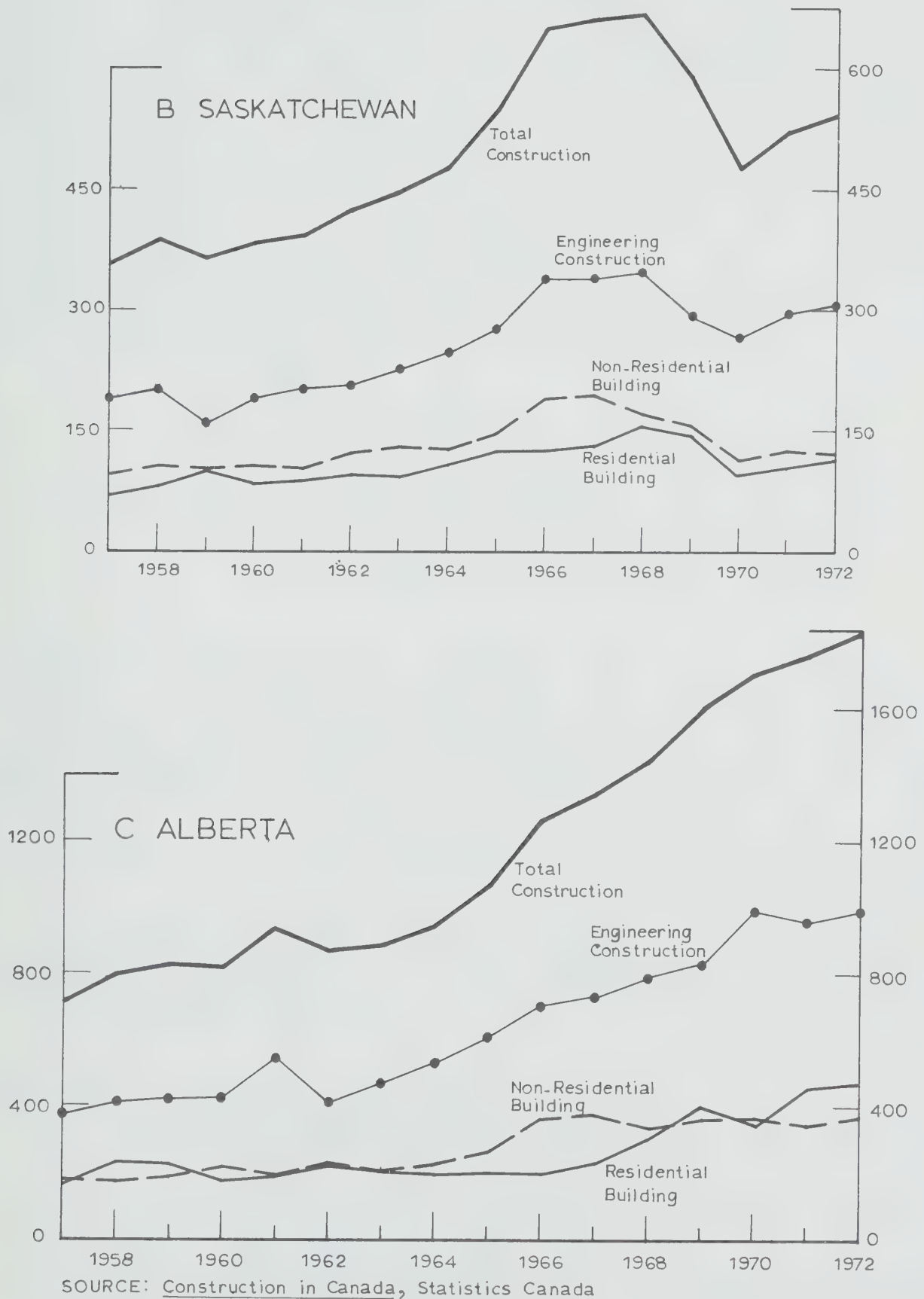
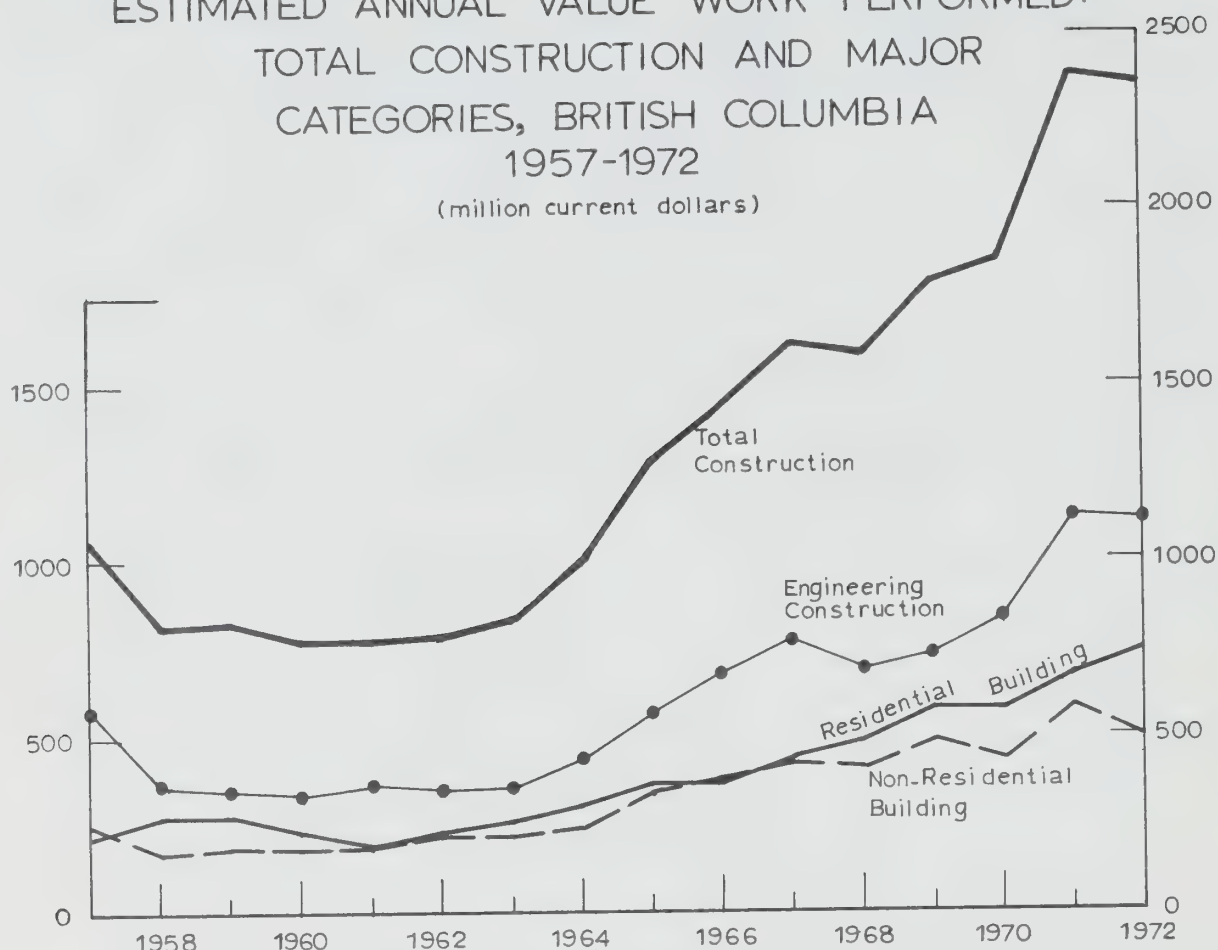


Figure 12

ESTIMATED ANNUAL VALUE WORK PERFORMED:
TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, BRITISH COLUMBIA
1957-1972

(million current dollars)



SOURCE: Construction in Canada, Statistics Canada

A comparison of these Figures reveals some striking similarities and differences among the provinces in trends in construction activity over the last decade and a half. The levels of activity in the three major construction categories were bunched most closely together in Ontario and Quebec, with each category representing approximately one third of the total work performed. The same situation prevailed in Nova Scotia until 1964. On the other hand the greatest divergence among the categories took place in Alberta and Saskatchewan throughout the period and in Newfoundland since 1968.

Engineering construction occupied a much more prominent place in total construction than did residential and non-residential building throughout the whole period in all four western provinces and in New Brunswick. This was the situation also in Prince Edward Island until 1971 and has been the case in Nova Scotia since 1966.

Residential building was lowest among the construction categories in Saskatchewan throughout the period. It was lowest also in Manitoba until 1971, in New Brunswick from 1959 to 1970 and in Prince Edward Island until 1966.

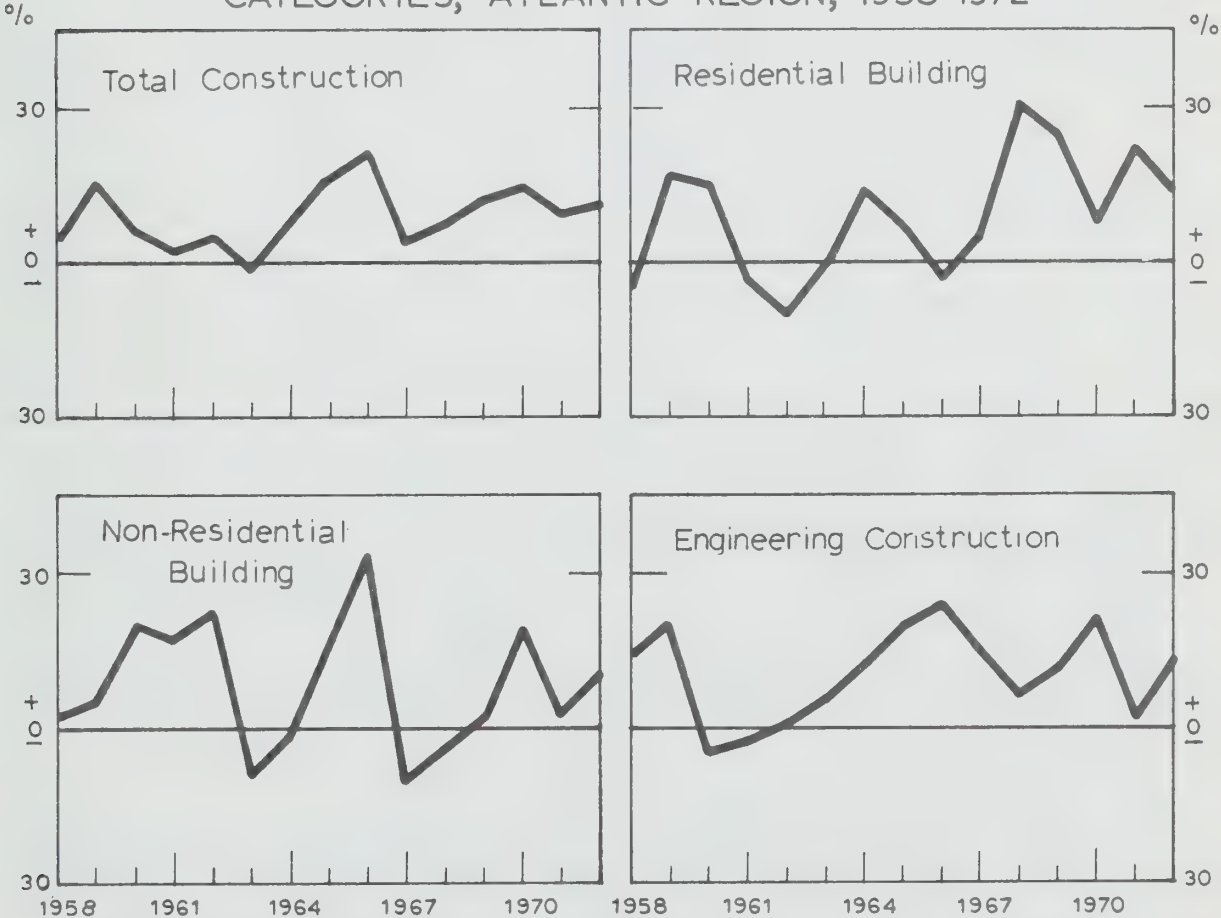
Non-residential building was in a middle position in most provinces. An exception to this occurred in British Columbia where non-residential building was the lowest of the three categories in most years. This reflected the rapid expansion of engineering construction in the primary industries and in utilities in this province

during the period. Residential building was also relatively more important than non-residential building in British Columbia over these years. Another exception is to be seen in Ontario where non-residential building occupied the highest position in seven out of the 16 years covered. The relatively important position of factory and commercial building in the economy of this province is mainly responsible for this situation.

In the next series of Figures, 13-18, the regional and provincial year-to-year percentage changes, in the estimated value data just examined, are presented. These figures reveal several important points. First, sharp annual fluctuations occurred in all cases similar to those noted earlier for Canada as a whole in Figures 1, 3, and 5. Second, as before the fluctuations were more pronounced in each of the major categories than they were for total construction. Third, the year-to-year fluctuations in all three categories were about equally violent in all provinces during the period with the exception of Newfoundland and Prince Edward Island where the variations in residential and non-residential building were clearly more extreme than those covering engineering construction. Fourth, there appears to be a strong tendency towards more erratic fluctuations, the smaller the geographic area covered and the smaller the volume of annual construction operations involved. Conversely,

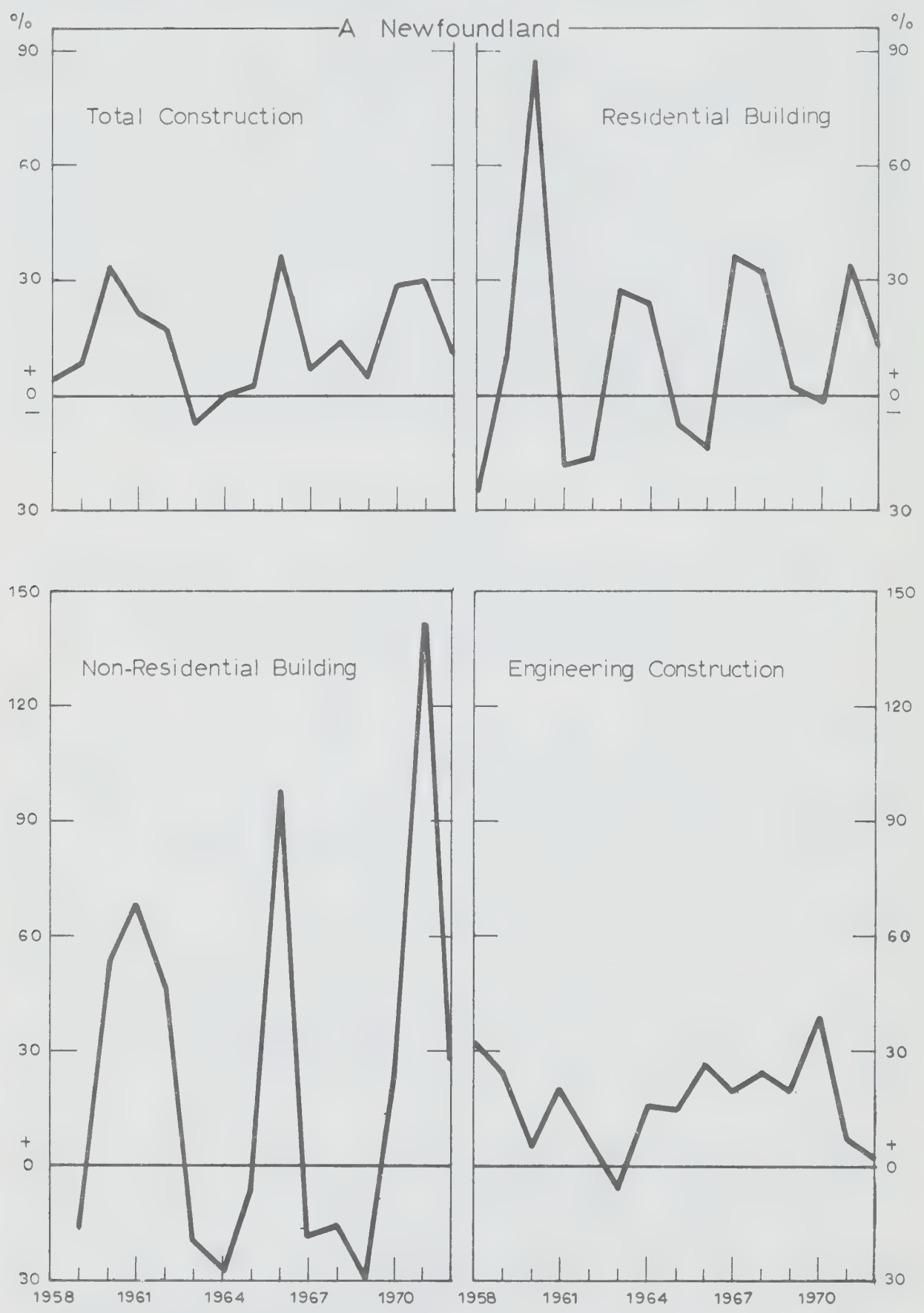
Figure 13

YEAR TO YEAR PERCENTAGE CHANGES ESTIMATED VALUE
WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, ATLANTIC REGION, 1958-1972



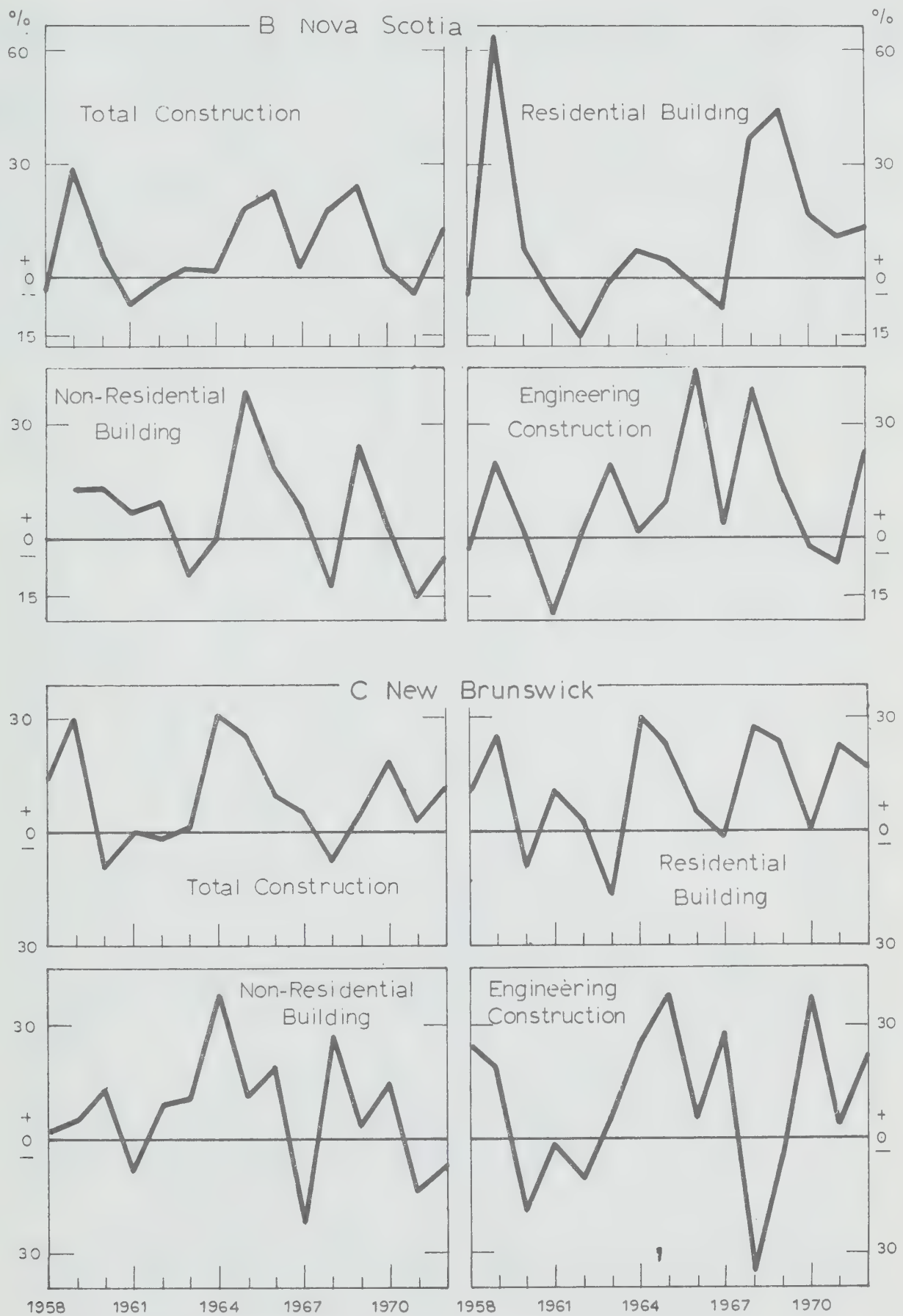
SOURCE: Construction in Canada, Statistics Canada

Figure 14
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972



SOURCE: Construction in Canada, Statistics Canada

Figure 14 continued
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972



SOURCE: Construction in Canada, Statistics Canada

Figure 14 continued
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972

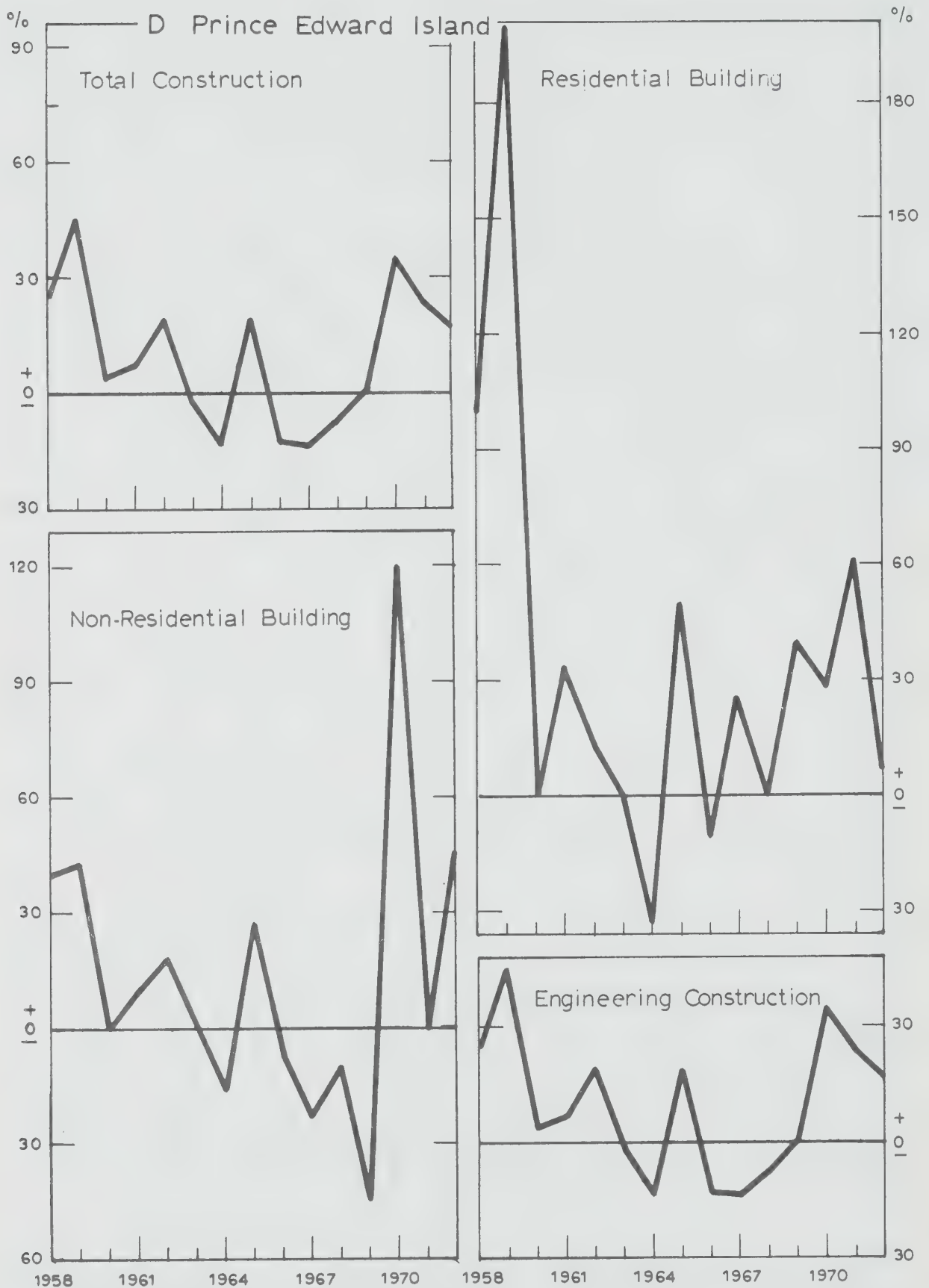
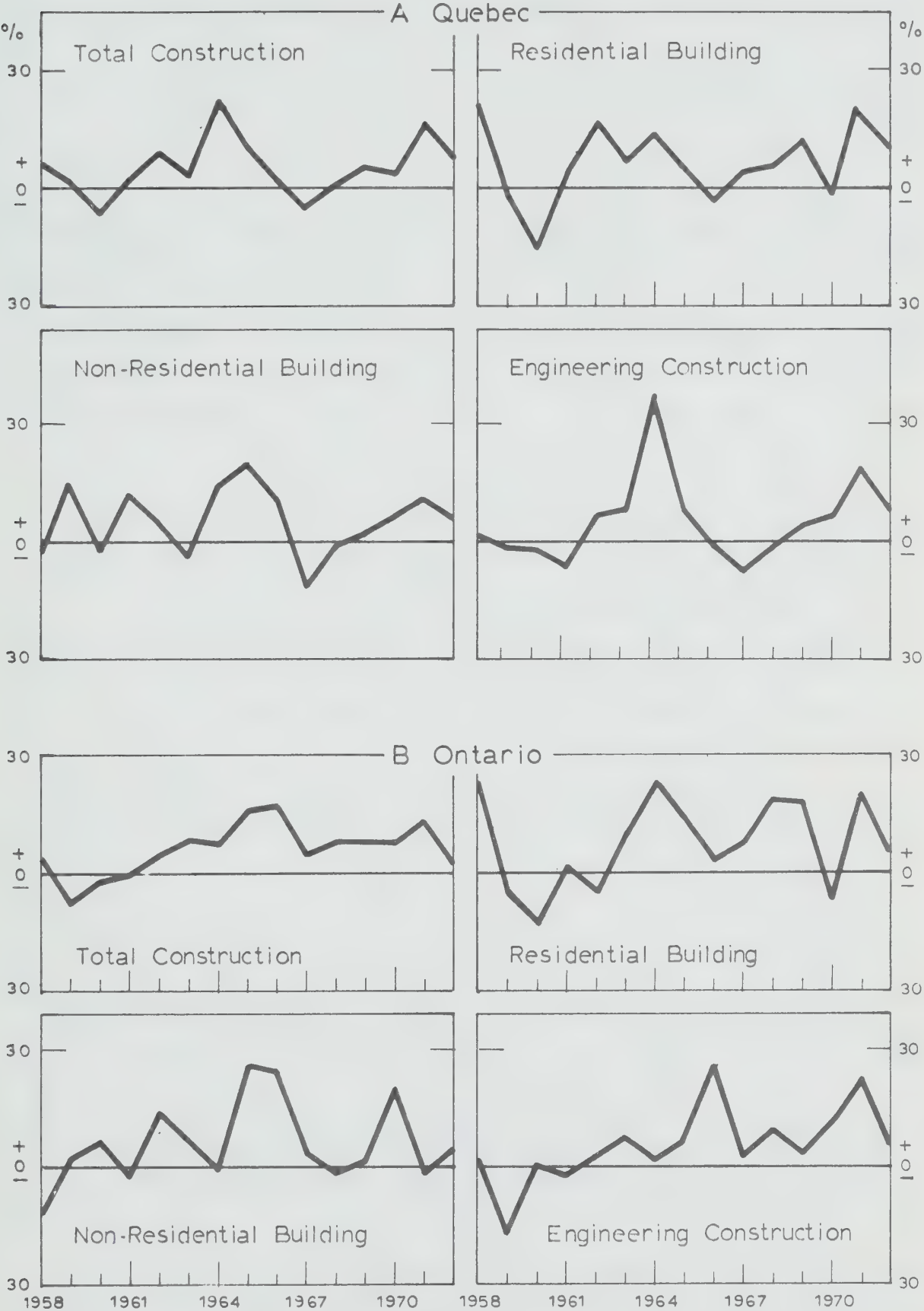


Figure 15
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972



just as some of the extreme fluctuations depicted in the regional charts are smoothed out in those for Canada as a whole, so those in the charts for separate Atlantic and Prairie provinces disappear in the corresponding regional figures. It will be observed, moreover, that the amplitudes of the year-to-year changes for Canada, do not exceed plus 25 or minus 19 per cent in any category during the years covered in Figures 1, 3 and 5. Similarly in the five regions the amplitudes shown in Figures 13, 15, 16, and 18 do not exceed plus 41 or minus 35 per cent. In sharp contrast with these figures the amplitudes in some of the smaller provinces are much greater, notably plus 200 and minus 44 in Prince Edward Island.

Finally, a fifth point to note, is that there were some instances where variations in one category of construction activity offset those in another. This occurred for example, during most of the 1960s in some of the Atlantic provinces and in Ontario. However, as was noted earlier for Canada as a whole, these were exceptional situations. In all other provinces residential and non-residential building tended to move simultaneously and there was little visible offsetting activity to expanding or contracting engineering construction in any part of the country.

Figure 16
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, PRAIRIE REGION, 1958-1972

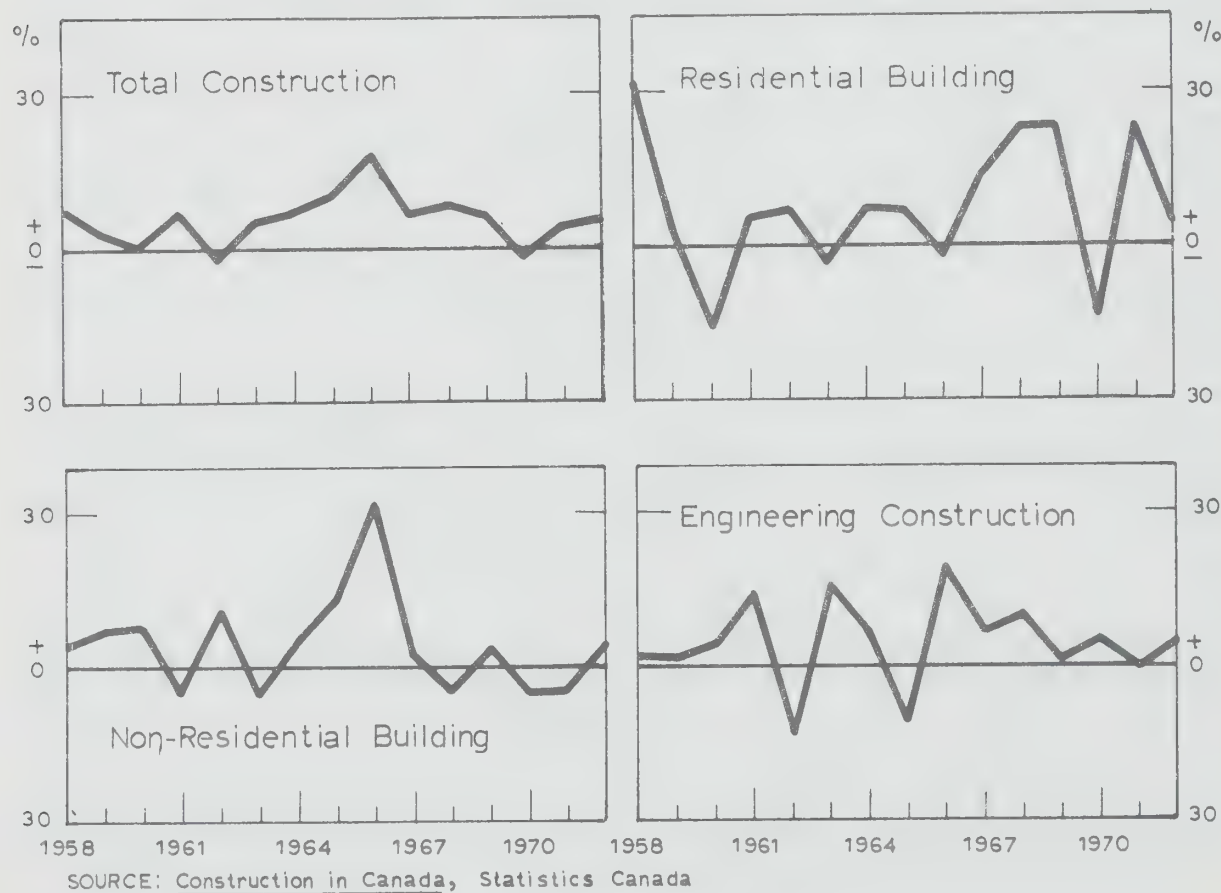


Figure 17
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972

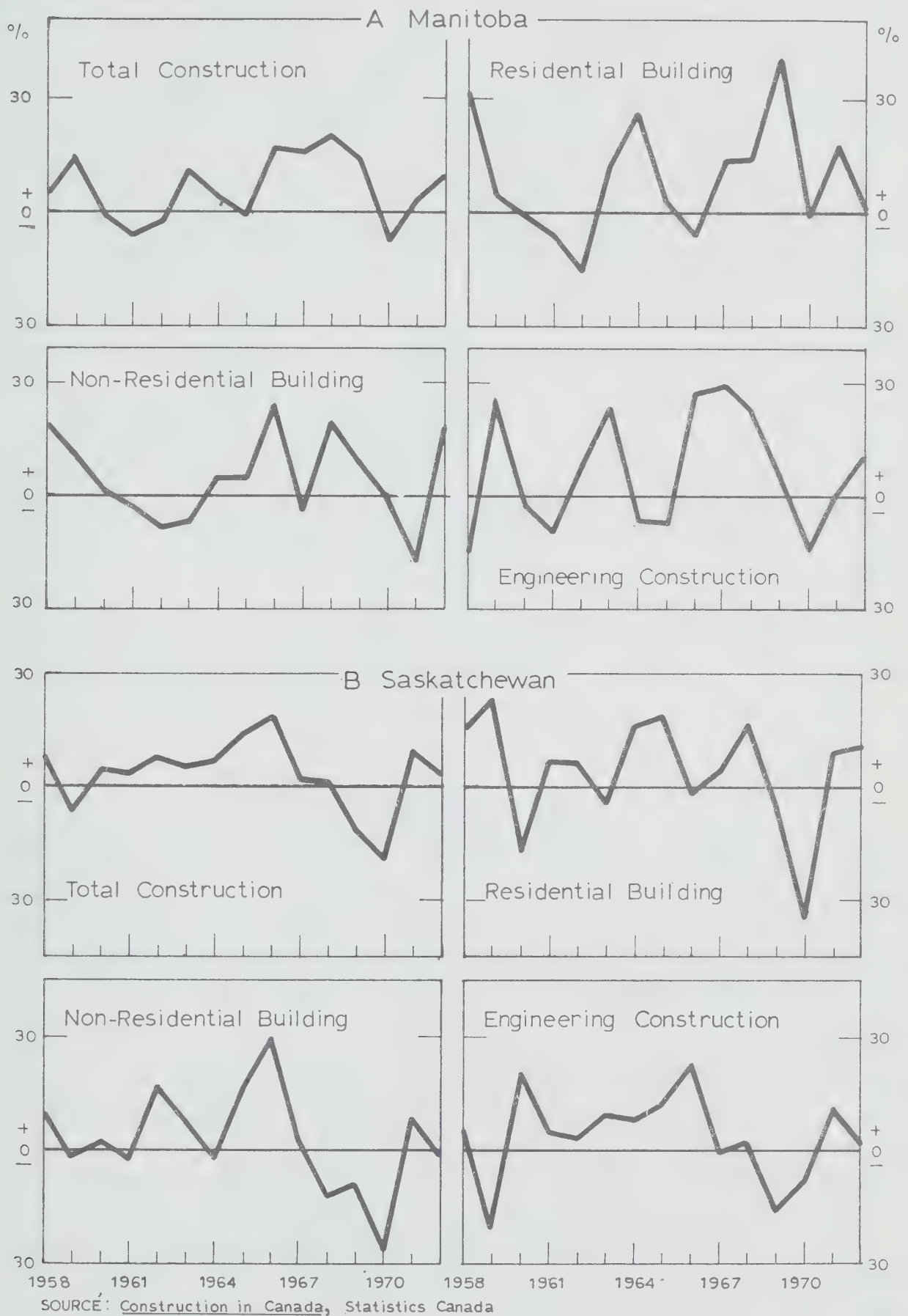
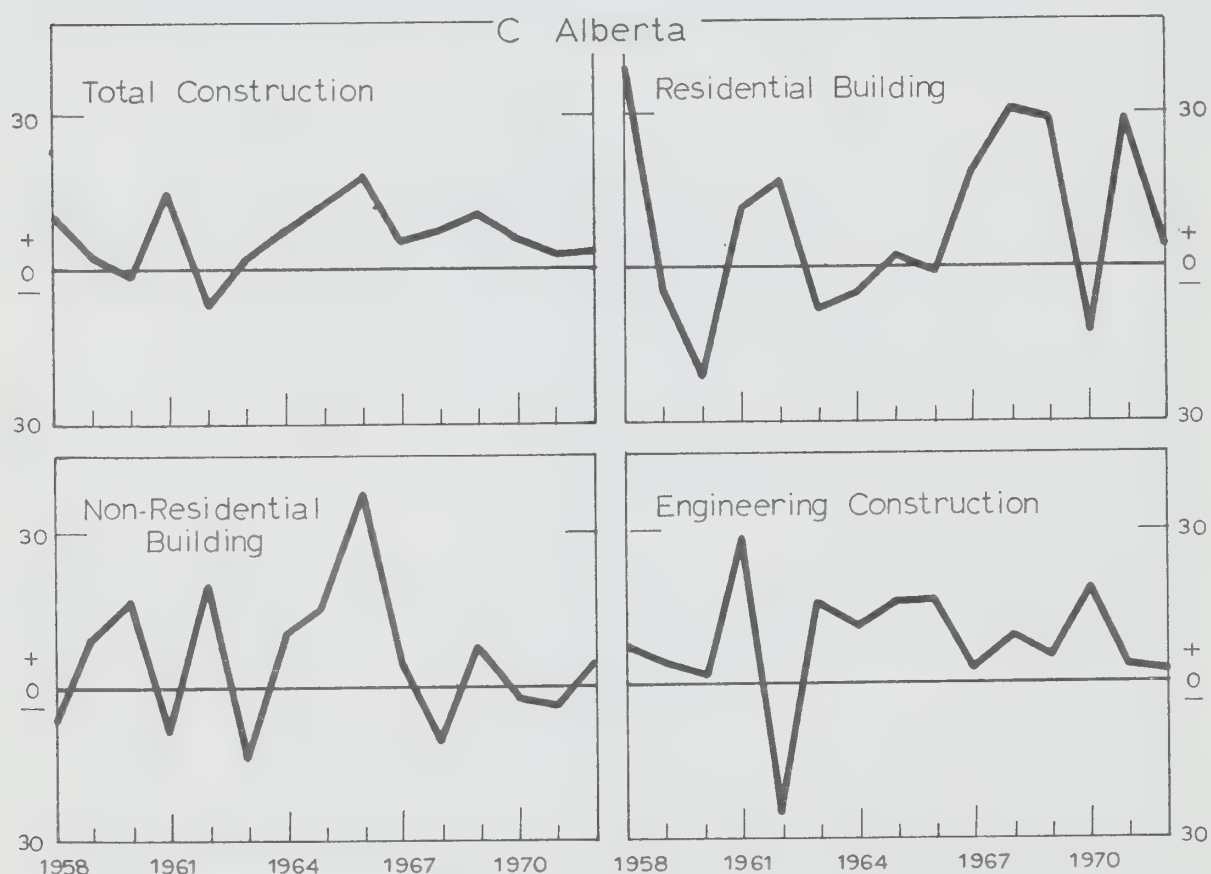


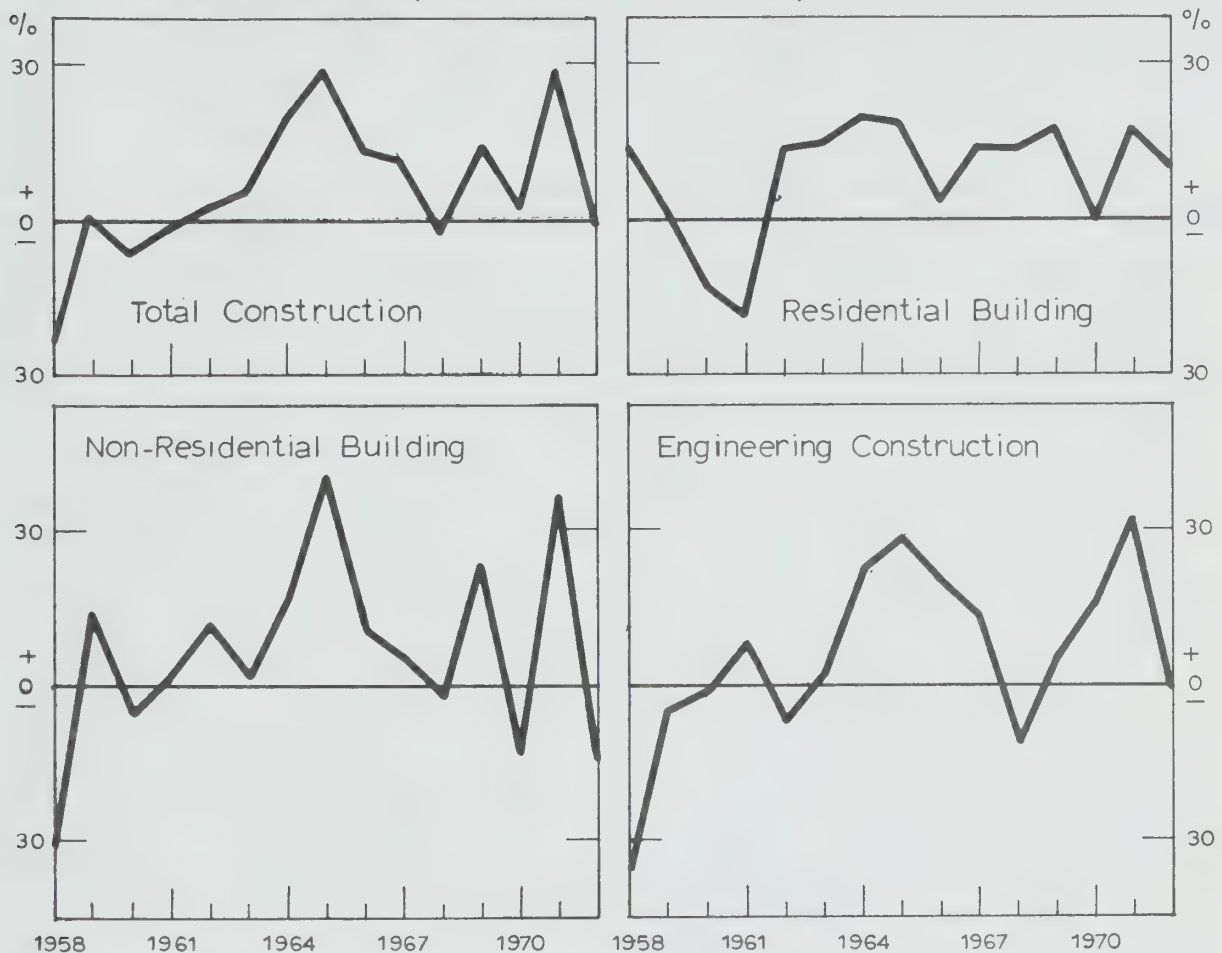
Figure 17 continued
 YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
 WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
 CATEGORIES, 1958-1972



SOURCE: Construction in Canada, Statistics Canada

Figure 18

YEAR-TO-YEAR PERCENTAGE CHANGES ESTIMATED VALUE
WORK PERFORMED TOTAL CONSTRUCTION AND MAJOR
CATEGORIES, BRITISH COLUMBIA, 1958-1972



SOURCE: *Construction in Canada*, Statistics Canada

Seasonal Fluctuations

The fluctuations examined above have all been of a year-to-year or cyclical character. The construction industry in Canada also experiences sharp seasonal swings in activity. These seasonal swings vary from one type of construction to another. Aside from those covering employment, given in chapter three below, the best available data for judging the extent of these variations are housing starts compiled each month by the Central Mortgage and Housing Corporation and also building permits issued monthly by municipal authorities and assembled by Statistics Canada. Monthly housing data are presented in Figure 19 and 20 and those for the three principal types of non-residential building in Figures 21, 22 and 23. Some data are also assembled by Statistics Canada and by Canadata, a division of Southam Business Publications in Toronto, on engineering contracts but these are not sufficiently representative or complete to provide significant statistical information on seasonal swings of activity on this construction category.

The amplitude of the seasonal fluctuations in housing starts as will be noted in Figure 19 has clearly narrowed over the past decade. This has resulted mainly from

concentrated efforts by governments and by the construction industry to increase winter employment.¹⁰

Earlier monthly non-residential building permit data are not available but it will be seen from those for 1971 in Figures 21-23, that the most pronounced seasonal fluctuations occurred in that year in commercial building. Substantial monthly changes also occurred in industrial and institutional building. In each of these charts, the total monthly values of all building permits of under \$250,000 and of those over this amount are also shown. It must be kept in mind that these data cover only the value of building permits issued each month. They do not provide estimates of the value of work actually performed or of expenditures incurred as examined earlier. Nevertheless it is of interest to note that the seasonal fluctuations in the total value of permits issued for smaller sized buildings are substantially less than that for larger sized undertakings. This is particularly so in the case of industrial building in Figure 21, and institutional, including government, building in Figure 23.

It should be noted that the monthly peaks for total permits are sharply affected by some single building projects. In August 1971, for example, a commercial building permit was issued valued at close to \$50 million. Similarly in January an industrial permit for \$27 million and in July and August institutional permits for \$11 and \$12 million respectively were issued. With appropriate advance planning, work on such undertakings today continues throughout the full 12 months of each year. Thus in these cases the dates on which permits are issued, have little if any direct bearing on the extent of the actual seasonal operations involved. This relationship does not apply to medium-sized or small buildings which require less than a year to complete although as in all cases the date of the issuance of the permits and that of the commencement of operations are not always the same.

The principal conclusion from an examination of these 1971 monthly building permit data, looked at from the standpoint of their likely effects on seasonal fluctuations in construction operations, is that it is the medium-sized projects valued between \$250,000 and say \$1,000,000 which appear to be most in need of attention. The situation, in this respect may change, however, over time.

Seasonal fluctuations in construction activity vary also from one area of Canada to another. They tend to be greatest in those parts of the country where the winters are most severe. Ironically, though, frost conditions particularly in wet and swampy areas favor some types of winter work. Moreover, improved building techniques including plastic shelters have greatly reduced the hardships and hazards of cold weather construction.¹¹

¹⁰During the 1950s the Canada Department of Labour and the National Employment Service in co-operation with other federal and provincial government agencies, employer organizations and unions initiated an annual Winter Work Campaign. This contained several features. One of the first was the "Why Wait for Spring? Do it Now!" widely publicized appeal begun in 1954. The Municipal Winter Works Incentive Program was added in 1958 and the \$500 Winter House Building Bonus in 1963. Cf. Canada, Department of Labour, *The Impact of Winter on the Canadian Worker*, Ottawa, Queen's Printer, 1965.

¹¹Cf. "Winter Construction" by C. R. Crocker, *Building Research in Canada*, National Research Council, Ottawa, December 1955.

Figure 19
MONTHLY DWELLING STARTS BY TYPES,
CANADA, 1961-1971

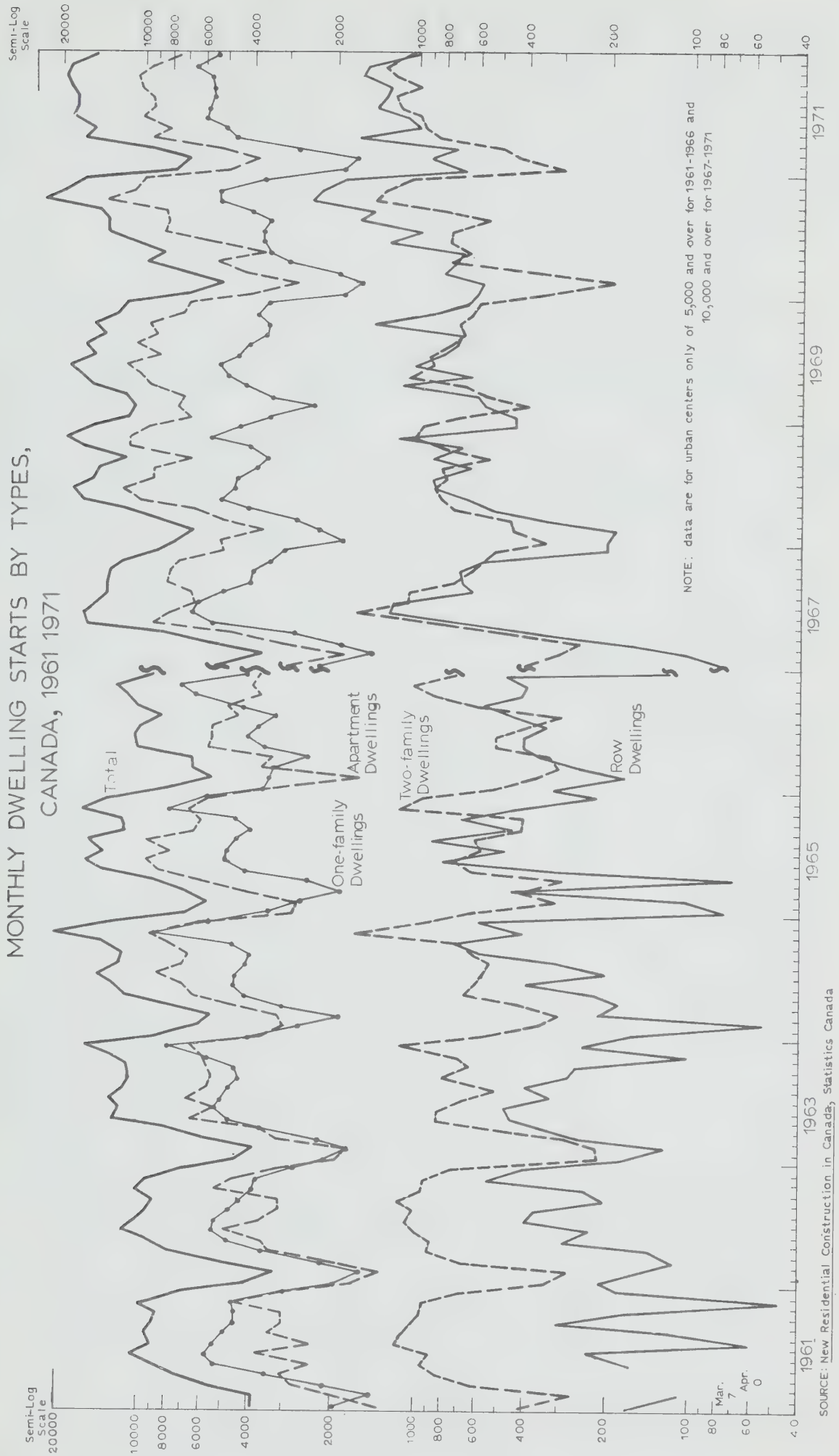


Figure 20
MONTHLY DWELLING STARTS BY TYPES, 1971

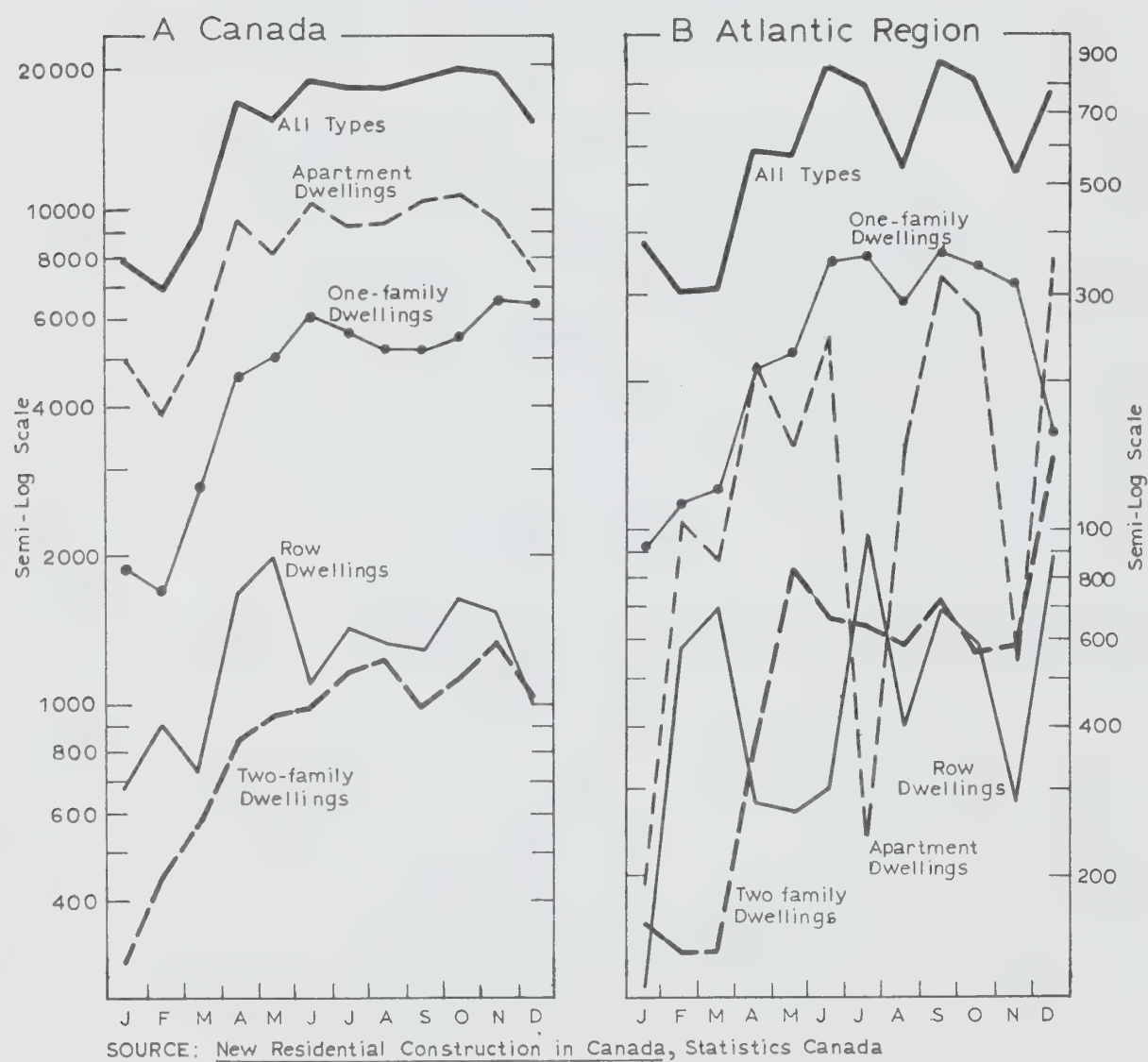
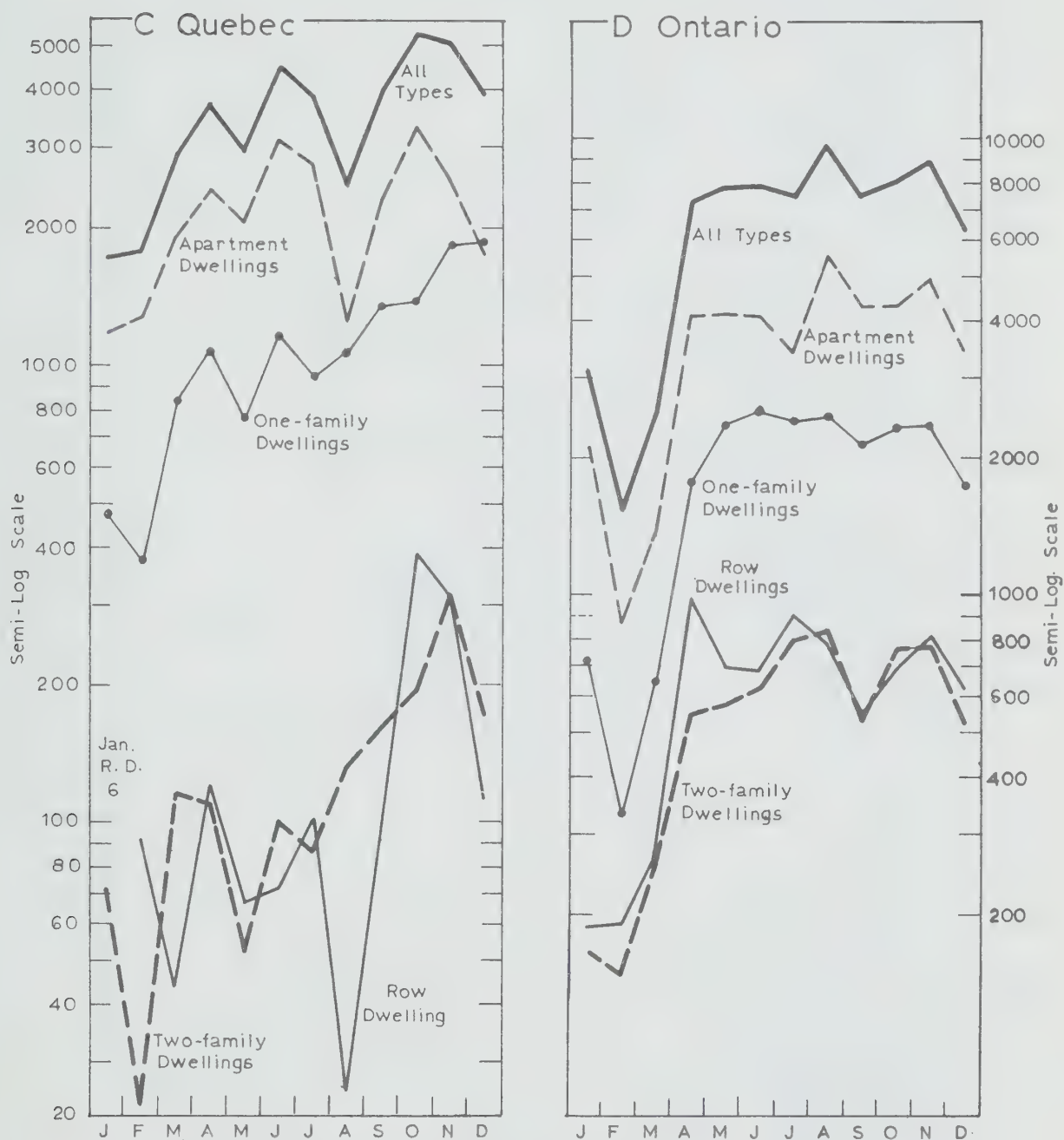
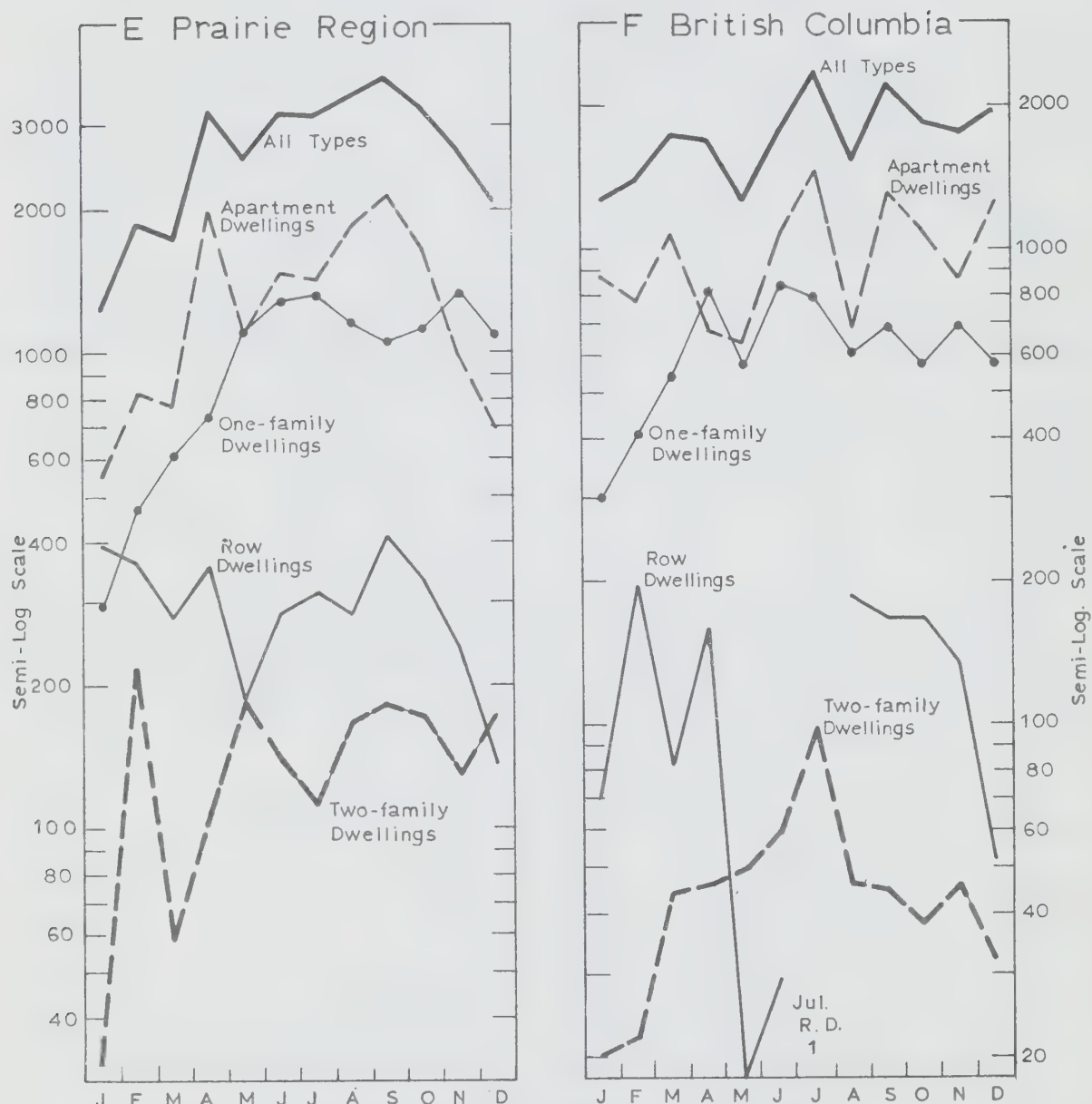


Figure 20 continued
MONTHLY DWELLING STARTS BY TYPES, 1971



SOURCE: New Residential Construction in Canada, Statistics Canada

Figure 20 continued
MONTHLY DWELLING STARTS BY TYPES, 1971



SOURCE: New Residential Construction in Canada, Statistics Canada

Figure 21.
ESTIMATED MONTHLY VALUE INDUSTRIAL BUILDING PERMITS
CANADA, 1971

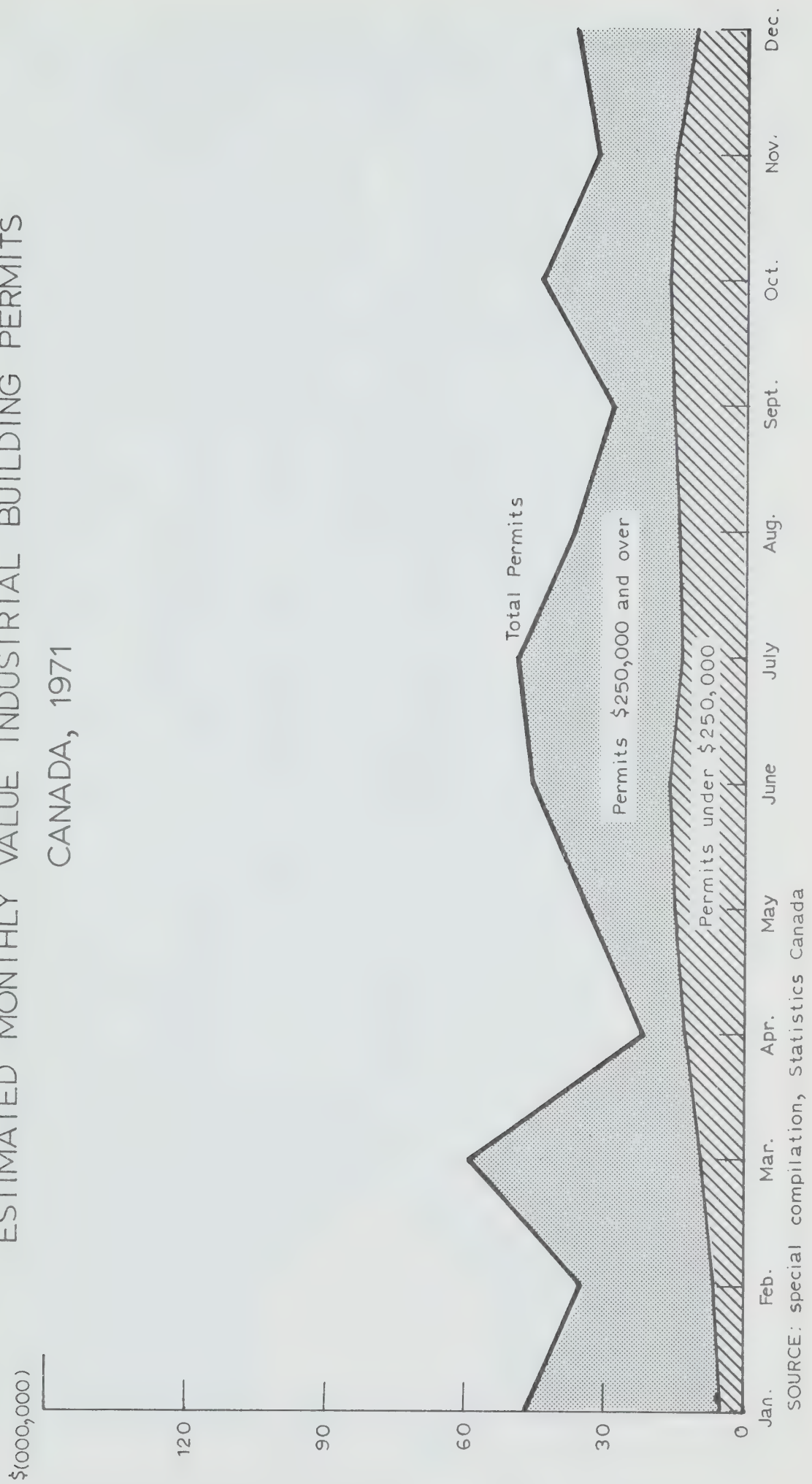
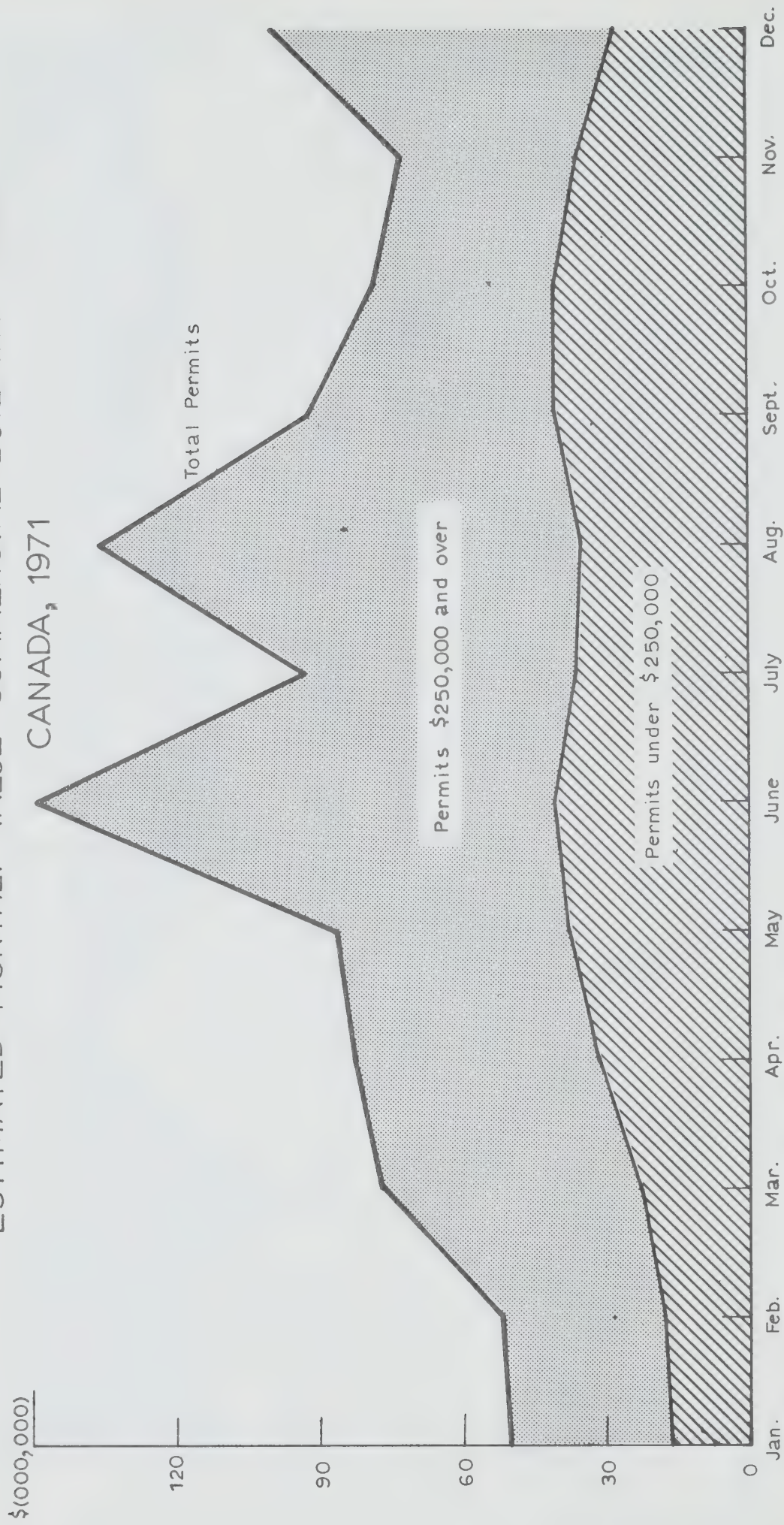
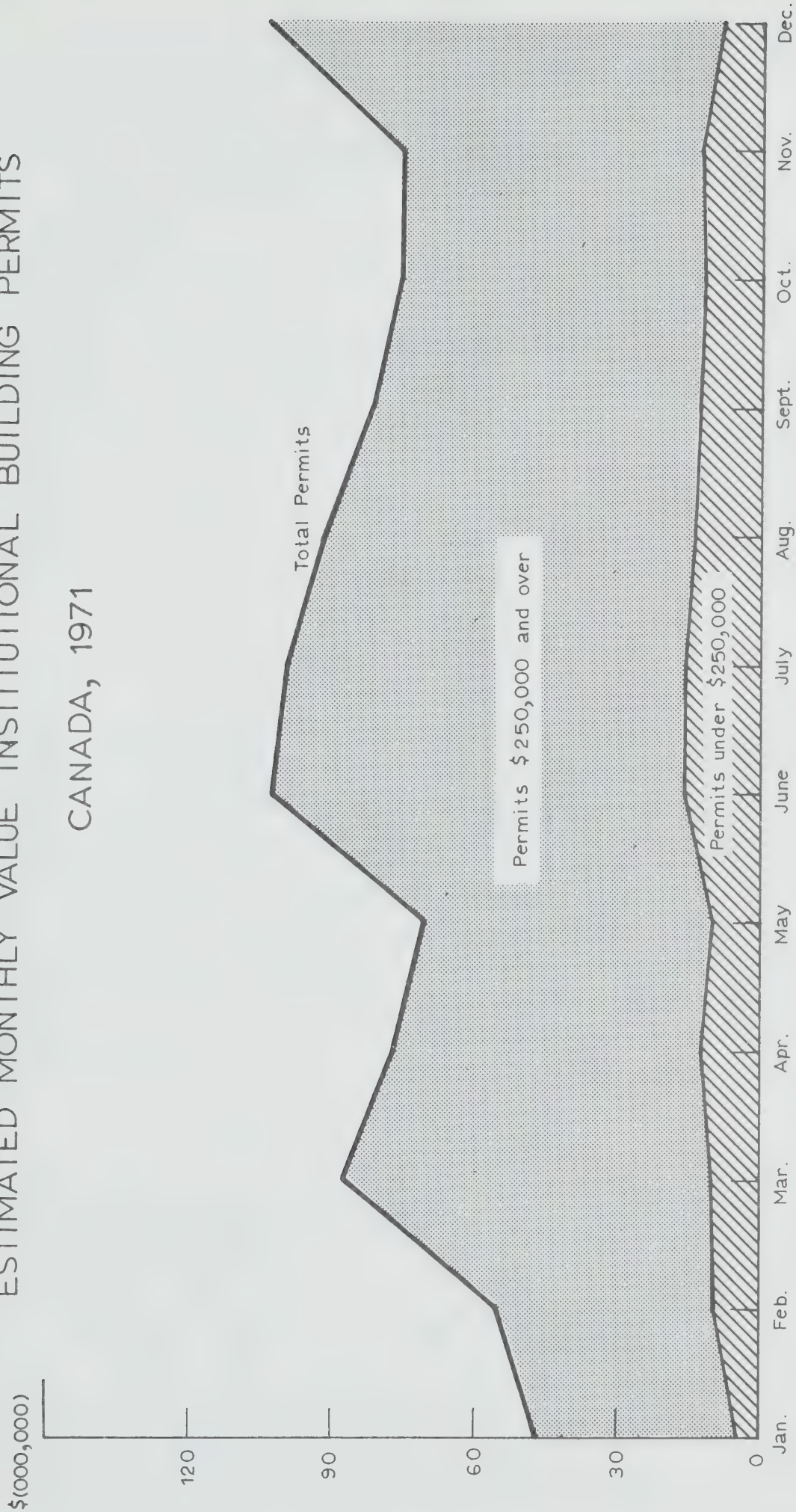


Figure 22
ESTIMATED MONTHLY VALUE COMMERCIAL BUILDING PERMITS
CANADA, 1971



SOURCE: special compilation, Statistics Canada

Figure 23
ESTIMATED MONTHLY VALUE INSTITUTIONAL BUILDING PERMITS
CANADA, 1971



SOURCE: special compilation, Statistics Canada

chapter three

IMPACT OF CONSTRUCTION INSTABILITY

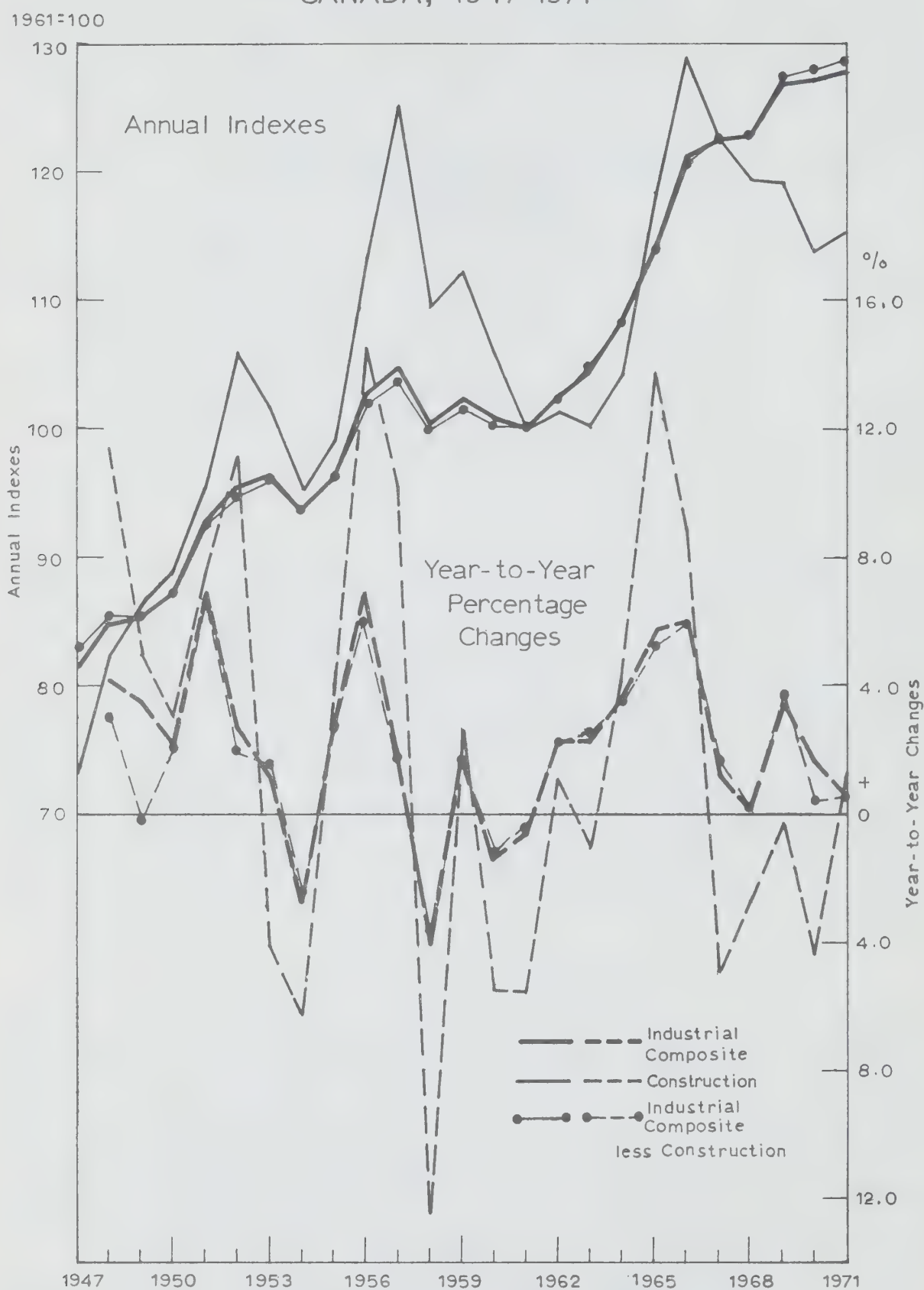
The extensive fluctuations that occur from year to year and from season to season in construction operations in Canada have many far reaching consequences. In human terms the first and most obvious of these is their impact on employment. This part thus begins with an examination of employment patterns in the industry. This is followed by a review of developments in collective organization and bargaining and of the effects of instability on the functioning of labor markets, wage rates and earnings. This leads to an analysis of the growth and operation of contracting firms including their profit and loss position. The discussion then turns to technological innovations and trends in productivity. Finally, changes in construction prices and costs are explored and the effects of these on the industry itself and on the economy.

Employment – Annual Changes

Estimates of employment in most industries are secured monthly by Statistics Canada from establishments throughout the country. From these estimates, annual indexes of employment in construction have been compiled beginning in 1947, and using the year 1961 equal to 100. These, and similar annual indexes for the composite of all industries surveyed, and for this composite less construction, are presented in the upper portion of Figure 24. The variations in these annual indexes over the full 25-year period have clearly been much more pronounced in construction employment than in the other two series.

The year-to-year percentage changes in the employment indexes are traced out in the lower part of Figure 24. These reveal in an even more striking fashion the much sharper peaks and valleys in construction work in Canada over the past quarter of a

Figure 24
ANNUAL EMPLOYMENT INDEXES AND YEAR-TO-YEAR PERCENTAGE CHANGES CONSTRUCTION
AND INDUSTRIAL COMPOSITE
CANADA, 1947-1971



SOURCE: Review of Employment and Average Weekly Wages and Salaries,
and special tabulation for industrial composite less construction,
Statistics Canada

century than have occurred generally in the economy. It is clear too that while extreme fluctuations in construction employment have taken place less frequently since 1959 than earlier, their amplitude in recent years has become greater relative to that in other industries. Over the full period the average year-to-year percentage change in construction employment was 6.1. The corresponding percentage for the industrial composite was 2.9 while that for the industrial composite less construction was only 2.5.

These same annual indexes of employment in construction and in the industrial composite are shown also in Figure 25 along with those for each of the other industries covered in the monthly survey. With the single exception of forestry it is clear that employment in construction followed a much less even course over the 15 years included in this chart than it did in the other sectors of the economy.¹ The steadiest growth pattern was in finance,² followed by trade, transportation³ and services. The first two, and notably the last of these four industries, also had the most rapid expansion in employment. The work force in services in fact more than doubled over the 15 years from an index of 92 in 1957 to 186 in 1971.⁴ Construction and forestry are actually the only two industries shown in Figure 25 in which employment was not steadily increasing.

The annual changes in construction employment measured by both the monthly establishment and household surveys over the years for which estimates are available, can be seen in Table V. The paid worker estimates from the Labour Force Survey in the third column are roughly similar to those based on the establishment surveys in the second column with peaks occurring in both series in 1966, 1969 and 1972. While these annual changes have been taking place, the estimates based on each survey have remained fairly steady over the past 8 years, between 349,000 and 380,000 in column 2 and between 385,000 and 418,000 in column 3. In forestry, on the other hand, there has been a downward trend in the average annual level of employment since 1956.⁵ Downward trends in the working force in agriculture,⁶ fishing and trapping⁷ which had begun earlier also continued during these years.

The average annual level of unemployment in construction is also included in Table V, beginning in 1953. The estimates in this case are from a special tabulation by Statistics Canada. They indicate a peak of close to 100,000 in 1961 or 21 per cent of the estimated total labor force in the industry. In the economy as a whole the unemployment rate during that year was 7.1 while in the economy less

¹ Agriculture, fishing and trapping, public administration, non-commercial services and small firms with under 20 employees are not included in the monthly Employment and Payrolls Survey. Cf. Table V below, footnote b.

² Includes insurance and real estate.

³ Includes communications and other utilities.

⁴ The increase was most rapid during the past 10 years from an estimated total number employed of 200,000 in 1961 to 379,000 in 1971.

⁵ In 1956 the annual level was estimated at 118,000; in 1971 it was 72,000. Cf. *The Labour Force*, 75-001, Statistics Canada.

⁶ The peak in the agricultural working force in Canada estimated at 1,500,000 was reached in the summer of 1939. Cf. *Labor in Canadian Agriculture*, by author, Harvard University Press, 1960 p. 10.

⁷ The estimated average annual labor force in fishing and trapping rose during the postwar years from 27,000 in 1946 to 30,000 in 1950 the first full year Newfoundland was part of Canada. The figure fell to 15,000 in 1959, rose to 26,000 in 1964 and again in 1966, and stood at 22,000 in 1971. Cf. *The Labour Force*, *op. cit.*

Figure 25
ANNUAL EMPLOYMENT INDEXES, SELECTED INDUSTRIES,
CANADA, 1957 -1971

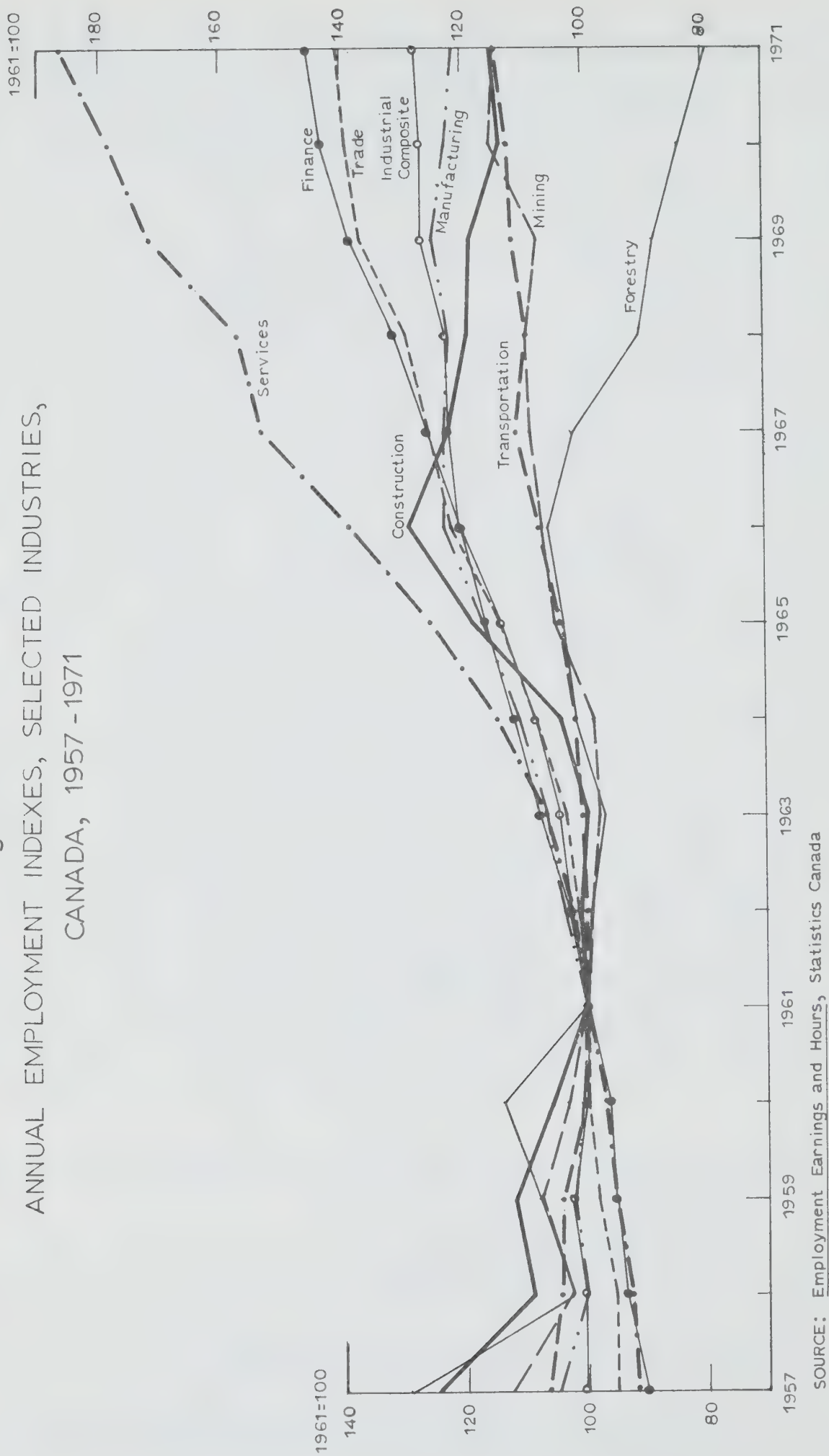


TABLE V
Employment and Unemployment in the Construction Industry, Canada, 1942 - 1972
(000)

Year	Employees in Larger Reporting Units ^a	Estimated Employees based on All Reporting Units ^b	Labor Force ^c				
			Employed			Number Un-employed ^d	Total Labor Force
			Paid Workers	Self Employed and Unpaid Family Workers	Total Number Employed		
1942	165						
1943	161						
1944	132						
1945	141						
1946	168		153	56	209		
1947	200		167	68	235		
1948	221		202	65	267		
1949	231		227	68	295		
1950	235		238	70	308		
1951	212		253	71	324		
1952	231		252	62	314		
1953	231		262	60	322	33	355
1954	221		249	62	311	51	362
1955	232		278	64	342	51	393
1956	266		318	64	382	42	424
1957	192		340	66	406	62	468
1958	169		332	65	397	92	489
1959	175		340	73	413	83	496
1960	170		323	64	387	97	484
1961	168	292	307	69	376	99	475
1962	177	305	321	72	393	79	472
1963	181	306	333	73	406	73	479
1964	193	323	334	76	410	60	470
1965	221	357	385	78	463	53	516
1966	244	380	418	81	499	51	550
1967	233	363	396	79	475	59	534
1968	228	361	390	80	470	68	538
1969	227	377	396	86	482	62	544
1970	218	366	389	82	471	85	556
1971	221 ^e	368 ^f	412	83	495	85	580
1972	209 ^e	349 ^f	415	86	501	88	589

^aAnnual figures are averages of monthly data from the Statistics Canada Employment and Payrolls Survey of reporting units having 20 or more employees. There were approximately 45,000 reporting units in 1972 covered by the monthly Survey with employees totalling around 3,900,000 during the summer of that year. Some 4,900 of these reporting units were in the construction industry with employees as shown in the table estimated at 211,000 in 1972. It should be noted that the 1948 Standard Industrial Classification is used for the years 1942 to 1956 inclusive while the 1960 Standard Industrial Classification is used for the years 1957 to 1970. Some transfers of reporting units between industries were made due to changes in the revised Standard Industrial Classification. As a result a substantial reduction occurred in construction. Thus, without these changes the index for construction in 1957 and in subsequent years would have been significantly higher for the year and for each month.

^bThese annual estimates are compiled from the total employment data presented in column one from all establishments with 20 or more employees plus information secured from a sample survey of small establishments with 19 or less employees. In the case of construction some 3,800 establishments were included in this sample survey in 1972. The estimates are not available prior to 1961. For the economy as a whole estimates of employees are based on these two sources plus data on fishing and trapping, public administration and non-commercial services. Non-agricultural employees totalled around 6,500,000 in 1972. Cf. *Estimates of Employees by Provinces and Industry, 1961-68, February 1971*, Statistics Canada.

^cThe Labour Force Survey based on a monthly sample of some 30,000 households covers everyone attached to the industry. This explains in large part the higher annual figures than those based on the Employment and Payroll Surveys. There are also some classification differences between the Labour Force and the Employment and Payrolls Surveys — cf. *Comparison of Labour Force Survey and Estimates of Employees Paid Workers Series*, Working Paper, August 1970, Statistics Canada.

^dThe estimates of numbers unemployed are not available before 1953. From that year to 1960 the original estimates were based on the 1948 Standard Industrial Classification. Adjustments in the figures for these years have been made to conform with those for more recent years, based on the revised 1960 Standard Industrial Classification.

^ePreliminary.

^fProvisional estimates based on the same relationship between columns 1 and 2 in these two years as that which existed during the five years 1966 to 1970.

Sources: *Employment and Average Weekly Wages and Salaries, The Labour Force* and special tabulations, Statistics Canada.

construction it was 6.1. The estimated average number unemployed in construction had dropped by 1966 to 51,000 or to 9.3 per cent of the labor force in the industry. This compared with a rate of 3.6 in the economy and 3.1 in all sectors less construction. The level of unemployment in construction was back up to 85,000 five years later in 1971 and to 106,000 during the first half of 1972. The rates of construction unemployment were 14.7 and 18.7 respectively, again much larger than those for the economy, namely 6.4 and 7.0.⁸

Employment – Seasonal Variations

The fluctuations from year to year in construction employment in Canada follow an irregular pattern. Those of a seasonal nature are, on the other hand, highly regular. The only significant change, apparent in Figure 26, that has occurred since 1950 in the persistent pattern of monthly employment has been a narrowing of the amplitude between the summer high and the winter low beginning in the late fifties. This change resulted primarily from the annual Winter Work Campaign introduced during the decade and continued with several additional features over a 10-year period.

This trend towards less seasonality in construction employment shows up more clearly in Figure 27 although the indexes in this case are plotted on a semi-log rather than on a regular arithmetic scale. The amplitude of the annual employment pattern (or the difference in index points between the summer high in construction employment and the winter low) in 1957 was 67. In 1961 the amplitude had dropped to 41, in 1966 it was 37 while in 1971 it was 34. There had been a dramatic reduction in the amplitude particularly during the late fifties and early sixties. Nevertheless the seasonal pattern of construction employment in Canada remained pronounced and the problems associated with the large number of workers involved continued to be of critical importance in the economy.

The monthly employment changes in other industries over recent years are also portrayed in Figure 27. Except in forestry where the numbers employed are much smaller, 72,000 on average in 1971 compared with 495,000 in construction, the seasonal fluctuations were not nearly as large in the other sectors.⁹ These vary all the way from finance, where typically little monthly change occurred, to services where employment regularly peaked during the summer holiday months. The patterns for manufacturing, trade, transportation, and mining fell in between. In manufacturing a definite dip has occurred in recent years in July due to annual model change-overs, mainly in automobiles, and to the closing of some plants for extended summer vacations. This slackening in factory work during the summer, and the pre-Christmas build-up of employment in trade late in the year, have tended to offset higher mid-year employment in service and in most other industries.

⁸The unemployment rates for the economy less construction during these same periods were 5.8 and 6.1 respectively.

⁹In agriculture and fisheries the seasonal employment swings are also pronounced. In 1972 the peak labor force estimate in agriculture was 578,000 in July. The low, in February, was 415,000. In fisheries and trapping the corresponding figures were 32,000 in June and July and 17,000 in February.

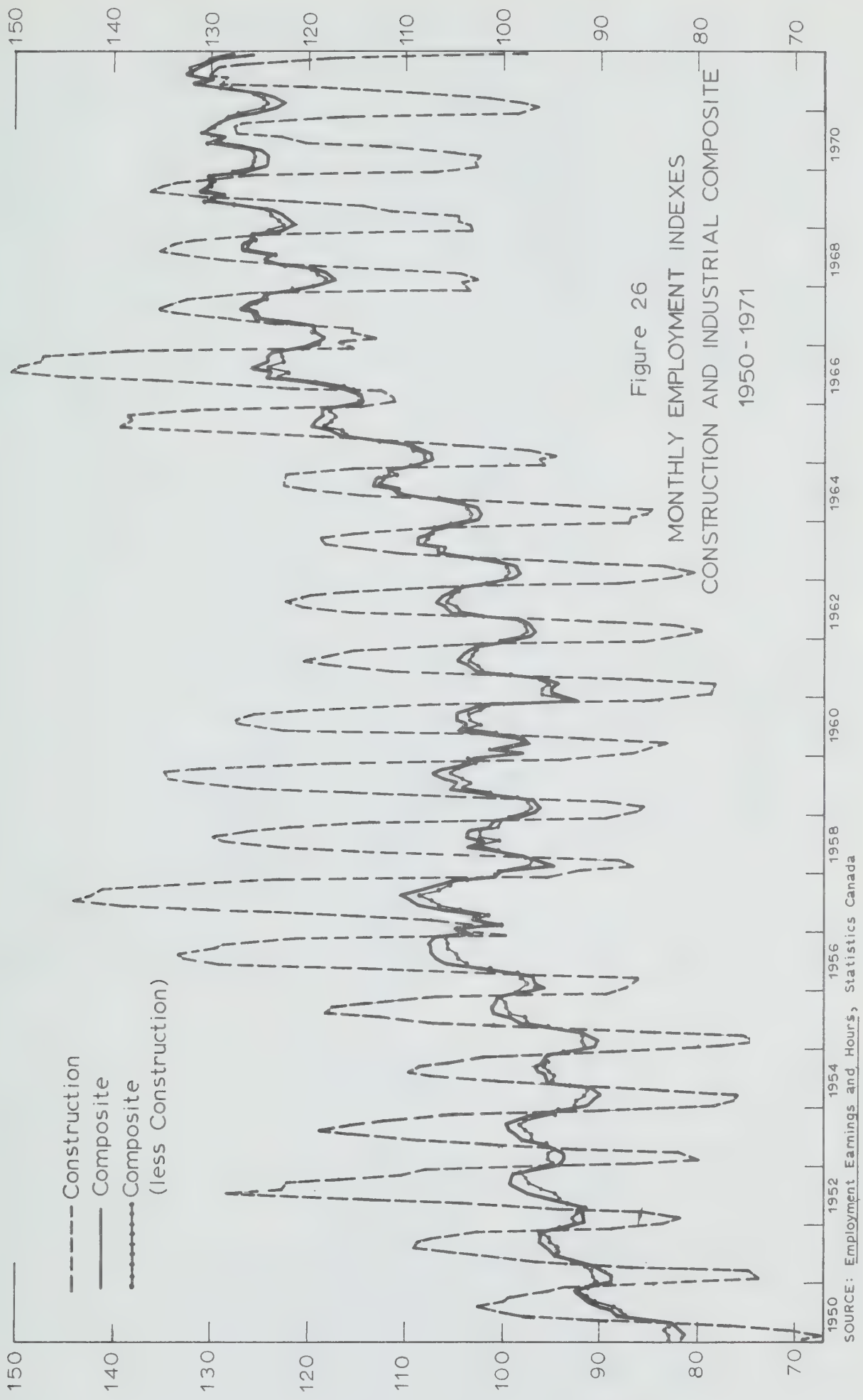
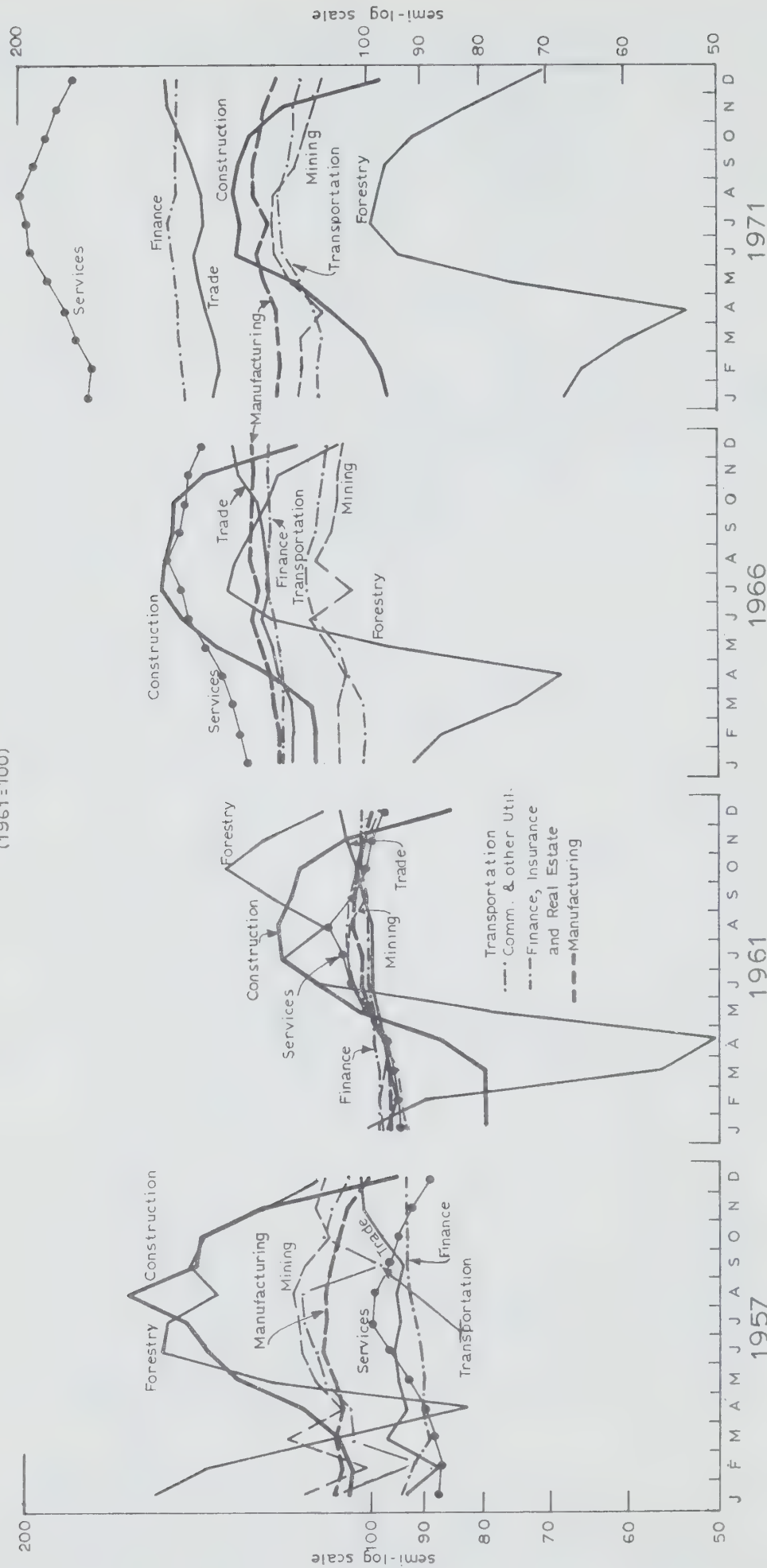


Figure 26
MONTHLY EMPLOYMENT INDEXES
CONSTRUCTION AND INDUSTRIAL COMPOSITE
1950 - 1971

SOURCE: Employment Earnings and Hours, Statistics Canada

Figure 27
MONTHLY EMPLOYMENT INDEXES CONSTRUCTION AND OTHER
SELECTED INDUSTRIES, CANADA,
1957, 1961, 1966 AND 1971
(1961=100)



SOURCE: Employment Earnings and Hours, Statistics Canada

Insecurity of employment has always been a hard fact of life for most construction workers in Canada. It has not been possible, however, until recently to determine in a comprehensive manner the magnitude of the fluctuations in employment each year in the building and other trades. The development of broad pension and other social security programs has provided the type of information needed. A Data Base consisting of a two per cent sample of all adults with social security numbers in Canada has recently been compiled by the Unemployment Insurance Commission and the Department of National Revenue from insurance contribution and income tax records. From this Data Base estimates have been made of the average number of weeks of employment and average weekly and annual earnings of all major groups of workers in the construction industry in 1966 and 1968.¹⁰

It has been estimated from this sample survey that 368,000 persons worked in insurable categories in the construction industry in 1966 and 362,000 in 1968.¹¹ Assuming that a contribution week for unemployment insurance purposes is a reasonably close approximation of a week of employment,¹² as is done in Table VI, these data indicate that construction employees worked an average of 39 weeks in 1966 and 36 weeks in 1968.¹³

The average annual and weekly earnings for these same construction workers are also given in Table VI. These are gross employment earnings in each case estimated from income tax returns before any deductions were made.¹⁴ For Canada as a whole the annual employment earnings of construction workers increased from 1966 to 1968 by \$400 even though the average length of yearly employment was three weeks less. Annual earnings averaged \$5,200 in 1968 while weekly earnings were \$142. Comparable current figures would be substantially higher as a result of high wage rate increases in the meantime.¹⁵

Employment and earnings estimates are also given in Table VI for each of the five major Canadian regions. The estimated number of workers in the construction industry declined in Quebec and British Columbia from 1966 to 1968 while

¹⁰ Similar sample survey data are being compiled for more recent years.

¹¹ In 1966 all salaried workers earning over \$105 per week were excluded from unemployment insurance coverage. On June 30, 1968, the maximum limit was raised to \$150 per week. Persons paid on an hourly basis, on the other hand, were all included in categories covered under the program.

¹² A week is counted as a "contribution week" for unemployment insurance purposes even though those contributing do not work a full week. This tendency to over state employment is partially at least offset by any time worked for which contributions are not made. Cf. Table VI, footnote b.

¹³ All employees who contribute to unemployment insurance are registered annually usually in June and July. When this registration is made each worker is classified by occupation and industry and this classification is maintained until the next annual registration. Some workers classified in the construction industry during the course of a year would work in other industries and *vice versa*. For purposes of the estimates made here no allowance is made for such mobility. In net terms it is not likely to be large in most parts of the country.

¹⁴ The tabulations in this case were carried out mechanically by computer, matching the relevant data for the same individuals for their weeks of unemployment insurance contributions and their annual employment earnings through the use of their social insurance numbers without revealing the identity of those involved.

¹⁵ Cf. page 52.

TABLE VI

Estimated Total Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual and Weekly Earnings, Canada and Regions, 1966 and 1968.^a

Region	1966				1968			
	Number of Employees ^b	Average Weeks of Employment ^c	Average Annual Earnings ^d	Average Weekly Earnings ^e	Number of Employees ^b	Average Weeks of Employment ^c	Average Annual Earnings ^d	Average Weekly Earnings ^e
Atlantic	38,000	37	3,400	92	39,000	34	3,600	107
Quebec	111,000	39	4,500	116	96,000	35	4,900	142
Ontario	124,000	41	5,100	124	127,000	38	5,600	146
Prairie	54,000	38	4,600	120	60,000	37	5,100	139
Pacific ^f	41,000	38	5,800	153	40,000	36	5,900	167
CANADA	368,000	39	4,800	121	362,000	36	5,200	142

^aThe estimates in this and succeeding tables using similar data have been compiled from tabulations of weeks of contributions and of corresponding total earnings from Unemployment Insurance Commission and Department of National Revenue records derived from a joint Data Base consisting of a two per cent sample in 1966 and in 1968 of all those in the Canadian adult population having Social Insurance Numbers. The sample contained approximately 250,000 persons of whom some 100,000 to 110,000 made unemployment insurance contributions in each of these two years. It should be noted that smaller groups, particularly where the estimated total number covered is less than 1,000 could be subject to large sampling errors.

^bIncludes all persons who contributed to unemployment insurance during the year. Many persons classified for unemployment insurance purposes as employed in the construction industry work in fact in other industries during the course of the year. No allowance is made in these estimates for this shift. Similarly, however, it is known that workers classified under other industries for unemployment insurance purposes work in construction during the year. It can be assumed that these movements go some distance to balancing each other.

^cWeeks employed are measured by weeks contributed to the Unemployment Insurance Fund during the year. Most building tradesmen are covered by Unemployment Insurance and generally make a contribution for each week they work one hour or more. This means that a contribution week is roughly equivalent to an employment week used in the Labour Force Survey conducted by Statistics Canada.

^dThe average annual earnings estimate is affected by the inclusion in the group of those who work for short periods only during the year. The influence of this factor is removed in subsequent tabulations where estimated average earnings are determined for those falling within specified numbers of weeks of contributions to unemployment insurance or of weeks of employment each year, except of course in the category with the fewest weeks.

^eThe average weekly earnings tend to be over-estimated to the extent individuals include in their earnings those received from non-insured employment and these earnings are included in their annual income tax returns without the Unemployment Insurance Commission having any records of contributions for the weeks that may be involved. On the other hand, the weekly earnings estimate tends to be reduced to the extent persons unemployed for part of the year obtain temporary or part time work either in their own occupation or elsewhere for which they make a weekly Unemployment Insurance contribution but for which weeks their earnings are less than those for a regular full week in their occupation.

^f“Pacific” or “British Columbia” includes Yukon and Northwest Territories in this and most other regional tables and figures.

increases occurred in the other three regions. The longest average length of employment in each year was in Ontario with just over 41 and 38 weeks respectively. The shortest was in the Atlantic Region with 37 weeks in 1966 and 34 weeks in 1968. The lowest average annual and weekly earnings in both years were in the Atlantic Region. Quebec had the second lowest in each case in both years with the exception of average weekly earnings in 1968 when the average in Quebec of \$142 was higher than that in the Atlantic and the Prairie Regions.

Estimates comparable to those covering all construction workers in Table VI can be made for each of the principal occupation groups in which the total number involved permit reasonably reliable statistical results. This has been done in Table VII. Laborers comprised by far the largest single group in both years covered with more than 25 per cent of the total, followed in 1968 by carpenters, electricians and plumbers.

The average number of weeks of employment differs widely among these various occupational groups. In 1966, service workers, painters, laborers, truck drivers and boilermakers had the shortest average periods, all with under 38 weeks per year. In 1968 most of these five groups dropped to 32 weeks and five more groups now had 38 weeks or under in that year, namely carpenters, plasterers, machine operators, bricklayers and cement workers. Plumbers, sheet metal workers, crane operators, clerical workers, electricians and general foremen, on the other hand, all had an average of 42 weeks or more in 1966 and 39 or more in 1968.

The estimated average annual and weekly gross earnings of each of these principal occupational groups in the construction industry in Canada are also given in Table VII for 1966 and 1968. Increases in average weekly earnings occurred, over the two year period, in each of the individual groups included in the table. There were higher average annual earnings also in all groups with the exception of boilermakers and service workers whose estimated average annual earnings had declined by some \$100 and \$200 respectively in 1968. General foremen and plumbers, obtained the largest two year gain amounting to \$1,000 and \$700 respectively. Their annual earnings reached estimated average totals in 1968 of \$7,900 for foremen and \$6,800 for plumbers. These two along with electricians with \$6,500 received the highest employment earnings as reported in their income tax returns that year. Crane operators, however, received among the highest average weekly earnings, namely \$178, along with \$184 for general foremen and boilermakers.

Similar estimates for each of the largest occupational groups have been developed from the same source for the provinces. These are presented on a regional basis in Tables VIII-XII for 1968. The patterns, as one would expect, follow much the same course both for average weeks of employment per year and for average earnings as those for Canada as a whole. These are, however, significant variations. In the Atlantic Region for example, it will be noted in Table VIII, that the estimated average weeks of employment for laborers falls to 28 weeks or just over half a year with annual earnings reported of only \$2,500. This reflects a large number of short time workers in construction many of whom are engaged in other industries, notably agriculture, fishing and forestry at other times of the year. Plasterers and painters in Quebec had on average, an even shorter work year in 1968 with only 25 and 26 weeks respectively but with somewhat higher annual earnings of \$3,900 and \$3,800.

TABLE VII

Estimated Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual and Weekly Earnings by Principal Occupational Groups, Canada, 1966 and 1968.

Occupational Group ^a	1966				1968			
	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	113,000	37	3,800	103	103,000	33	4,100	122
Carpenters	56,000	39	4,800	123	51,000	36	5,200	144
Electricians ^b	22,000	44	6,200	139	25,000	40	6,500	161
Plumbers ^c	23,000	44	6,100	140	23,000	42	6,800	161
Machine Operators ^d	17,000	39	5,200	135	19,000	37	5,900	156
Painters ^e	17,000	36	3,900	107	15,300	32	4,300	131
Truck Drivers ^f	12,000	37	4,600	117	14,000	36	4,800	135
Clerical Workers	14,000	42	3,600	85	13,000	41	4,200	101
Bricklayers ^g	13,000	41	5,000	123	12,500	37	5,600	151
Sheet Metal Workers	7,600	46	5,400	118	8,800	42	5,900	140
Plasterers ^h	7,400	41	5,200	128	7,700	36	5,600	155
General Foremen	7,600	44	6,900	156	7,600	39	7,900	184
Boilermakers ⁱ	4,400	37	6,000	159	4,300	32	5,900	184
Cement Workers ^j	4,000	40	5,000	129	3,700	38	5,400	143
Service Workers ^k	3,400	36	3,300	92	3,600	32	3,100	96
Crane Operators ^l	1,600	42	7,000	166	1,500	42	7,300	178
Others ^m	45,000	36	5,600	157	49,000 ⁿ	37	5,700	154
Total	368,000	39	4,800	121	362,000	36	5,200	142

^aBased on occupational classification used for census purposes.

^bIncludes related electrical workers.

^cIncludes pipefitters.

^dIncludes operators of earth moving and other construction machinery.

^eIncludes paper hangers and glaziers.

^fIncludes other transport workers.

^gIncludes stone masons.

^hIncludes lathers.

ⁱIncludes platers and structural workers.

^jIncludes concrete finishers.

^kIncludes protective, cleaning, food, fire and other service occupations.

^lIncludes hoistmen and derrickmen.

^mIncludes an estimated 250 stationary engineers, 100 glass, stone and clay workers, "other craftsmen", "other construction", "other production" workers and "none stated" workers.

ⁿThe total of "other" in Tables VIII-XII exceeds 40,000 due to the fact that some occupational groups given separately above are not included in some or all of the regional tables. Cf. footnotes for individual tables.

Source: see Table VI.

TABLE VIII
Estimated Employees in the Construction Industry
Contributing to Unemployment Insurance,
their Average Weeks of Employment,
Annual and Weekly Earnings by Principal
Occupational Groups, Atlantic Region, 1968.

Occupational Group	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	11,700	28	2,500	87
Carpenters	7,500	35	3,700	106
Machine Operators	2,400	35	4,400	127
Painters	1,600	35	3,100	89
Plumbers	1,500	42	5,300	126
Clerical Workers	1,500	42	3,800	91
Electricians	1,500	34	4,500	132
Truck Drivers	1,300	35	3,900	112
Bricklayers	1,200	36	4,300	119
General Foremen	900	41	5,700	139
Service Workers	700	32	2,600	91
Others ^a	7,200	37	4,300	118
Total	39,000	34	3,600	107

^aIncludes an estimated 500 plasterers, 400 sheet metal workers, 300 cement workers and 300 crane operators.

Source and interpretation of data, see Tables VI and VII.

TABLE IX
Estimated Employees in the Construction Industry Contributing to Unemployment
Insurance, their Average Weeks of Employment, Annual and Weekly Earnings by
Principal Occupational Groups, Quebec, 1968.

Occupational Group	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	27,000	32	4,000	127
Carpenters	14,000	34	4,900	145
Plumbers	7,400	41	6,400	156
Electricians	7,200	39	5,800	149
Truck Drivers	4,600	34	4,500	131
Painters	4,300	26	3,800	142
Machine Operators	3,700	38	6,200	161
Clerical Workers	3,600	41	4,200	101
Sheet Metal Workers	2,600	38	5,400	142
Bricklayers	2,400	33	5,100	151
General Foremen	2,000	38	7,000	185
Plasterers	1,500	25	3,900	155
Boilermakers	1,000	32	4,600	142
Cement Workers	1,000	33	4,800	144
Service Workers	700	31	3,700	119
Others ^a	13,000	37	5,500	148
Total	96,000	35	4,900	142

^aIncludes an estimated 200 crane operators, 200 stationary engineers and 50 glass, stone and clay workers.

Source and interpretation of data, see Table VI and VII.

TABLE X

Estimated Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual and Weekly Earnings by Principal Occupational Groups, Ontario, 1968.

Occupational Group	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	38,000	36	4,600	128
Carpenters	15,000	39	6,000	154
Electricians	9,300	43	7,000	165
Plumbers	8,400	43	7,300	169
Bricklayers	6,900	38	6,000	156
Painters	5,600	35	4,600	134
Clerical Workers	5,000	40	4,200	103
Machine Operators	4,800	43	6,600	153
Truck Drivers	4,500	38	5,000	132
Sheet Metal Workers	3,700	44	6,300	143
Plasterers	3,300	39	6,600	168
General Foremen	2,800	40	7,300	183
Cement Workers	1,600	41	5,500	134
Boilermakers	1,500	35	6,700	188
Service Workers	800	34	3,700	108
Others ^a	15,800	37	6,100	163
Total	127,000	38	5,600	146

^aIncludes an estimated 500 crane operators, 50 stationary engineers, and 50 glass, stone, and clay workers.

Source and interpretation of data, see Tables VI and VII.

TABLE XI

Estimated Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual and Weekly Earnings by Principal Occupational Groups, Prairie Region, 1968.

Occupational Group	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	17,000	33	3,600	110
Carpenters	7,200	38	5,400	142
Machine Operators	5,700	34	4,900	146
Electricians	4,300	42	6,600	159
Plumbers	3,000	44	7,000	157
Painters	2,400	35	4,500	128
Truck Drivers	2,000	38	5,000	134
Clerical Workers	1,700	39	3,600	93
Sheet Metal Workers	1,500	43	5,800	134
Plasterers	1,500	37	5,200	143
General Foremen	1,400	40	8,600	216
Bricklayers	1,200	40	5,700	142
Service Workers	1,000	32	2,400	74
Cement Workers	800	40	6,500	165
Boilermakers	700	30	6,600	218
Other ^a	8,600	38	6,000	160
Total	60,000	37	5,100	139

^aIncludes an estimated 400 crane operators.

Source and interpretation of data, see Tables VI and VII.

TABLE XII

Estimated Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual and Weekly Earnings by Principal Occupational Groups, British Columbia, 1968.

Occupational Group	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Average Weekly Earnings \$
Laborers	9,300	34	4,900	145
Carpenters	7,300	35	5,600	162
Electricians	2,700	37	7,600	202
Plumbers	2,700	40	6,900	172
Machine Operators	2,400	37	7,800	211
Truck Drivers	1,600	32	5,700	177
Painters	1,400	36	5,300	149
Clerical Workers	1,200	45	5,200	114
Boilermakers	1,100	31	6,400	208
Plasterers	900	35	5,600	159
Bricklayers	800	37	6,100	165
Others ^a	8,600	35	6,100	175
Total	40,000	36	5,900	167

^aIncludes an estimated 550 sheet metal workers, 500 general foremen and 400 service workers. Source and interpretation of data, see Tables VI and VII.

On the other hand, plumbers in the Atlantic Region and Quebec with averages of 42 and 41 weeks shared the longest periods of yearly employment with clerical workers. The plumbers annual earnings of \$5,300 and \$6,400 respectively were, moreover, among the highest in these two and the other three regions. They were in fact only exceeded or equalled by general foremen, except in British Columbia where they were less than those of both machine operators and electricians.¹⁶

Employment – Building Tradesmen Outside Construction

The average weeks of employment and average earnings presented above, it should be noted, cover only those building trades and members of other occupational groups who work in the construction industry. Large numbers of other building tradesmen work elsewhere, notably transportation, manufacturing, and the utilities. Fortunately it has been possible, again with the aid of the computer, to develop similar estimates for these persons in each of the principal building trades who work elsewhere in the economy. These estimates are set forth in Table XIII. Aside from the figure for laborers which is understandably large, it will be seen comparing these figures with those in Table VII, that slightly more electricians, sheet metal workers and boilermakers were employed outside construction than inside the industry. In the case of some other skilled groups, notably crane operators, stationary engineers and glass, stone and clay workers, there were actually many more employed outside construction.

In nearly all cases the average weeks of employment for those working outside construction were higher than for those in the industry. This reflected the generally

¹⁶The relatively low rate for plumbers in British Columbia reflected a five year collective agreement which did not expire until 1969.

TABLE XIII

Estimated Employees in Selected Building Trades Outside the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment and Annual Earnings, Canada and Regions 1968.

	CANADA				ATLANTIC REGION				QUEBEC				ONTARIO				PRAIRIE REGION				BRITISH COLUMBIA			
	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Number of Employees	Average Weeks of Employment	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$	Number of Employees	Average Weeks of Employment	Average Annual Earnings \$				
Building Trades ^a																								
Laborers ^b	450,000	38	3,700	47,000	33	2,500	144,000	38	3,600	164,000	40	4,200	57,000	35	3,500	38,000	38	4,400						
Carpenters	26,000	39	5,000	3,900	40	3,700	8,000	36	4,400	7,200	41	5,800	4,400	37	4,700	2,500	41	6,500						
Electricians	23,000	46	6,700	2,400	44	5,500	7,000	47	6,400	9,200	46	7,100	2,400	47	6,500	2,000	48	7,500						
Machine Operators	16,000	42	5,300	2,400	43	4,100	2,000	41	5,600	3,600	42	5,800	5,600	41	4,900	2,400	48	6,600						
Stationary Engineers ^c	14,000	45	6,700	1,800	46	5,200	2,500	43	6,800	6,600	47	7,200	2,200	45	6,300	900	38	6,700						
Crane Operators	13,000	43	6,200	700	41	4,700	3,500	39	5,400	6,000	46	6,700	900	39	6,000	1,900	42	6,600						
Bricklayers	13,000	38	5,700	+	-	-	3,200	34	5,000	7,800	40	6,000	+	-	-	+	-	-						
Plumbers	10,000	44	7,100	1,200	44	5,700	3,000	44	6,600	3,400	45	900	1,200	44	1,200	1,200	44	7,600						
Sheet Metal Workers	9,000	44	5,800	+	-	-	-	45	5,800	3,900	43	5,900	1,200	46	5,900	+	-	-						
Painters	8,000	40	5,000	900	44	4,800	2,300	38	5,000	2,300	42	5,400	1,400	40	4,400	1,100	40	5,600						
Glass, Stone and Clay Workers ^d	7,000	44	5,200	+	-	-	2,000	46	5,000	4,200	44	5,400	+	-	-	+	-	-						
Boilermakers	6,000	42	6,000	1,200	46	5,300	1,900	42	5,700	2,100	37	6,100	+	-	-	800	38	6,600						
General Foremen	9,400	40	7,000	+	-	-	2,400	36	6,400	2,900	41	7,300	700	45	6,400	+	-	-						

^aOf the other building trades not listed here, 650 cement workers and 250 plasterers were estimated as employed in Canada outside the construction industry in 1968.

^bExcludes laborers in agriculture, fishing, trapping, logging and mining as well as construction.

^cThe estimated number in the construction industry in Canada in 1968 was 250.

^dThe estimated number in the construction industry in Canada in 1968 was 100.

+ under 700

Source and interpretation of data, see Tables VI and VII.

greater employment stability elsewhere in the economy. Average annual and weekly earnings, on the other hand, tended to be less in most cases outside than inside the construction industry.

Employment – Under and Over 40 Weeks per Year

A breakdown of those employed in the construction industry for under and over 40 weeks in 1968 has been compiled on a provincial, regional and national basis and presented in Table XIV. This table also includes estimates of annual earnings for each of these groups and for all construction workers. It is estimated that only slightly more than half of all construction workers in Canada in 1968 were employed for 40 weeks or more or for approximately nine months or more. Ontario had the highest record in this regard with 58 per cent working a minimum of 40 weeks. Newfoundland and New Brunswick, on the other hand, had the lowest with only 36 per cent falling into this category.

Another striking feature of the table is the difference between the estimated average annual earnings of those who were employed under 40 weeks or nine months in 1968, and those who worked for a longer period that year. For Canada the figures were \$3,500 and \$6,300 respectively. The contrast was even more marked in Nova Scotia, New Brunswick and Prince Edward Island. Even in the case of those working 40 weeks and over the average annual earnings of \$4,700 in the Atlantic provinces were substantially less than those of \$7,500 in British Columbia.

It has also been possible to compile estimates similar to those in Table XIV for major types of construction. These are set forth in Table XV. They reveal that those working in trade contracting, who numbered close to one half of all construction workers in 1968, had a higher level of annual employment on the average than those in the other types covered. Of these workers, 57 per cent were employed in that year for 40 weeks and over. In residential construction, the second largest group, less than one half worked for 40 weeks or more in 1968. Their estimated average annual earnings were also less, \$4,800 compared with \$5,300 for those engaged in trade contracting work.

The data obtained from the Unemployment Insurance-National Revenue sample survey permit estimates to be made also of the distribution by weeks of employment of those in each occupational group. This distribution is presented graphically for 1966 and 1968 in Figures 28 and 29 for the same occupational groups as those included earlier in Table VII.

To simplify the analysis and the visual presentation in these charts the year is divided into 13 equal four week intervals. Since everyone covered contributed to unemployment insurance for at least one week per year, 100 per cent of each occupational groups shown as employed in the shortest interval namely one to four weeks. All members of some groups, notably plumbers and sheet metal workers were also employed for four to eight weeks and the latter in 1968 for eight to 12 weeks. Generally, though, as the time intervals lengthened the percentage of the members employed in each group dropped. Thus the higher the line on the chart, the greater the degree of employment stability enjoyed on average by the workers in the group concerned.

TABLE XIV
Estimated Employees Working Under 40 Weeks and 40 Weeks and Over in the
Construction Industry Contributing to Unemployment Insurance and their Average
Annual Earnings, Canada and Provinces, 1968.

Province	Employed Under 40 Weeks			Employed 40 Weeks and Over			Total Employed			
	Number	Percent- age of Provin- cial Total %	Average Annual Earnings \$	Number	Percent- age of Provin- cial Total %	Average Annual Earnings \$	Number	Percent- age of Canadian Total %	Average Weeks of Employ- ment	Aver- age Annual Earn- ings \$
Newfoundland	8,700	64	2,800	4,800	36	5,100	13,500	3.8	33	3,600
Nova Scotia	6,700	50	2,500	6,700	50	5,000	13,400	3.8	36	4,000
New Brunswick	6,800	64	2,400	3,800	36	4,800	10,600	3.0	33	3,300
Prince Edward Island	900	60	1,400	600	40	3,800	1,500	0.4	33	2,600
ATLANTIC REGION	23,100	59	2,300	15,900	41	4,700	39,000	11.0	34	3,600
QUEBEC	52,000	54	3,400	44,000	46	6,400	96,000	26.5	35	4,900
ONTARIO	53,300	42	3,800	73,700	58	6,400	127,000	35.2	38	5,600
Manitoba	6,900	46	3,500	8,100	54	6,100	15,000	4.1	38	5,100
Saskatchewan	8,500	55	2,800	7,100	45	5,100	15,600	4.3	35	4,400
Alberta	14,200	48	4,100	15,200	52	6,400	29,400	7.9	37	5,400
PRAIRIE REGION	29,600	49	3,500	30,400	51	5,900	60,000	16.3	37	5,100
BRITISH COLUMBIA	20,000	50	4,300	20,000	50	7,500	40,000	11.0	36	5,900
CANADA	178,000	49	3,500	184,000	51	6,300	362,000	100.0	36	5,200

Source and interpretation of data, see Table VI.

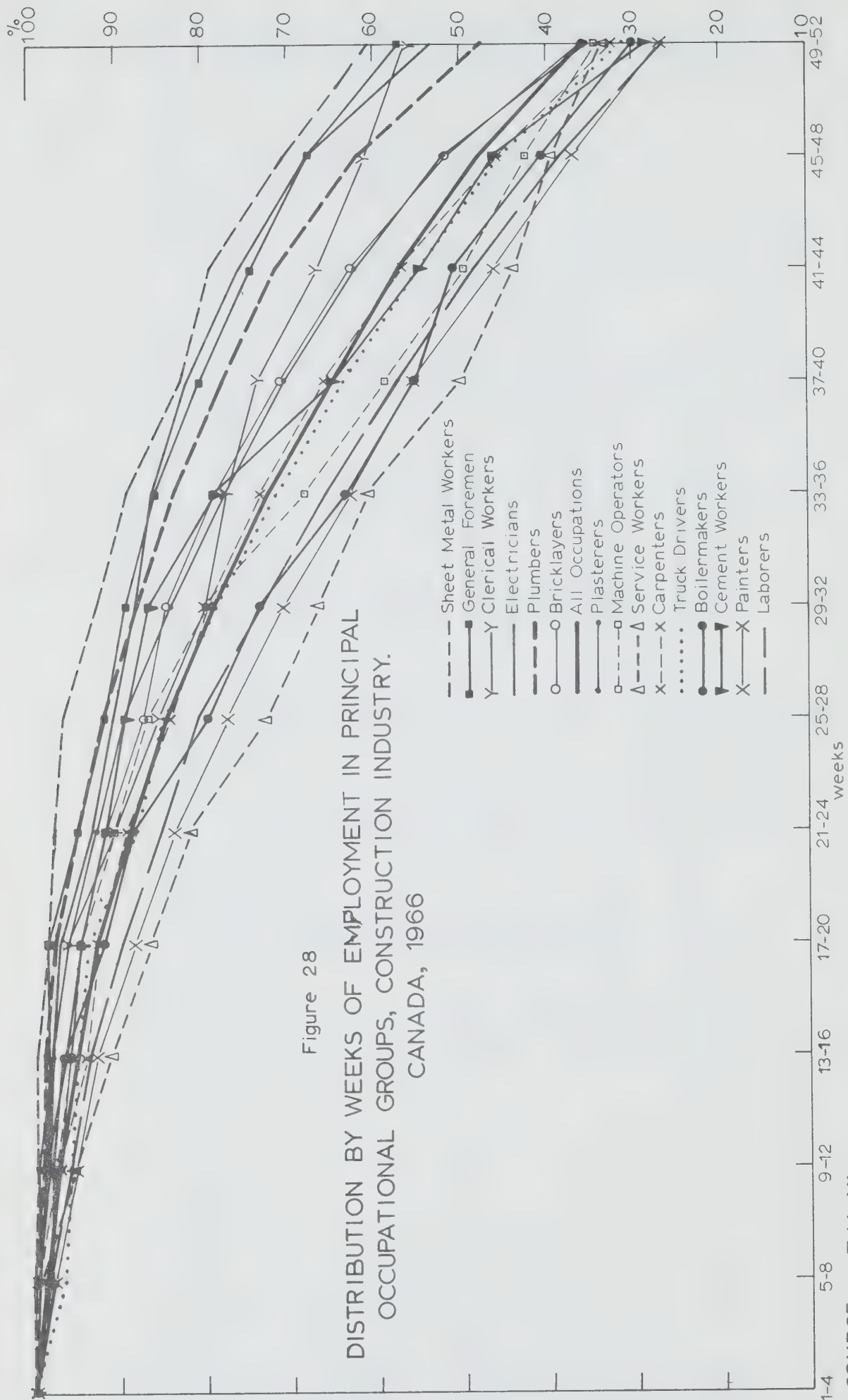
TABLE XV
Estimated Employees Working Under 40 Weeks and 40 Weeks and Over in Major
Types of Construction Contributing to Unemployment Insurance and their Average
Annual Earnings, Canada, 1968

Type of Construction ^a	Employed Under 40 Weeks			Employed 40 Weeks and Over			Total Employed			
	Number	Percent- age of Total in Each Type %	Average Annual Earnings \$	Number	Percent- age of Total in Each Type %	Average Annual Earnings \$	Number	Percent- age of Total Employed %	Average Weeks of Employ- ment	Average Annual Earnings \$
Trade Contracting	73,000	43	3,500	96,000	57	6,200	169,000	47	38	5,300
Residential	60,000	53	3,300	53,000	47	6,000	113,000	31	35	4,800
Highway, Bridge and Street	23,000	59	3,500	16,000	41	6,400	39,000	11	34	4,800
Other ^b	22,000	54	4,300	19,000	46	7,700	41,000	11	36	6,000
Total	178,000	49	3,500	184,000	51	6,300	362,000	100	36	5,200

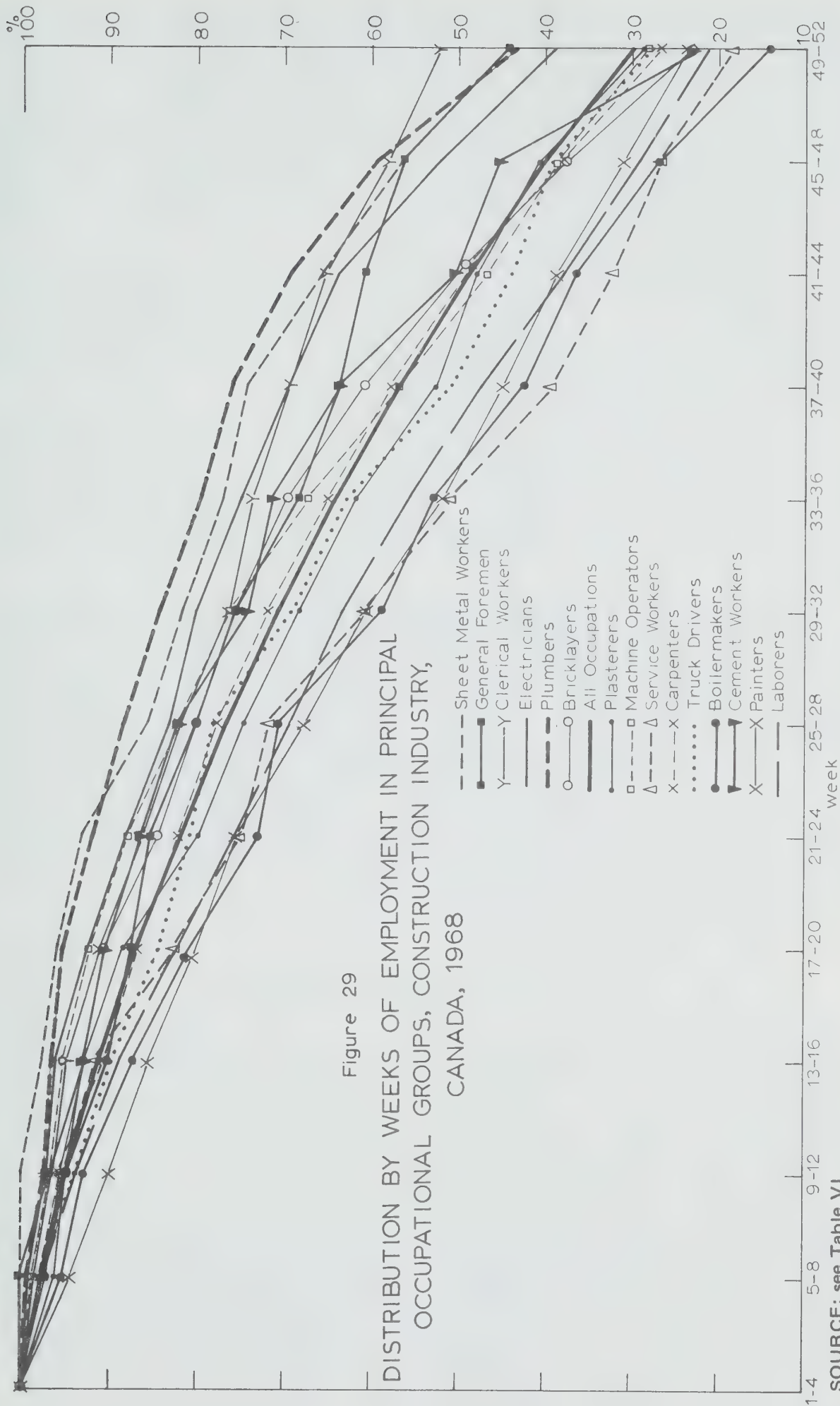
^aBased on Standard Industrial Classification

^bIncludes general contractors primarily engaged in the construction of such projects as hydro-electric plants, communication facilities, marine installations, water, gas and sewers.

Source and interpretation of data, see Table VI.



SOURCE: see Table VI



Sheet metal workers had the best overall employment record in Canada of all groups in 1968. They were replaced by plumbers in this respect in 1968. Painters and laborers on the other hand had the shortest average employment in both years. On closer examination it will be seen that in 1966 sheet metal workers, general foremen and electricians had over half of their numbers employed for 49 weeks or more. Two years later, clerical workers only were in this category. In fact in that year 50 per cent of all construction workers in Canada, it is estimated, had less than 37 to 40 weeks of employment.¹⁷

The distribution by weeks of employment in 1968 similar to that for Canada is charted for each of the principal construction occupational groups in the five regions in Figures 30 to 34. As in the Figures for Canada as a whole, the lines for each occupational group created a fan-like picture in all regions with the spread most pronounced in the Atlantic Provinces and Quebec.

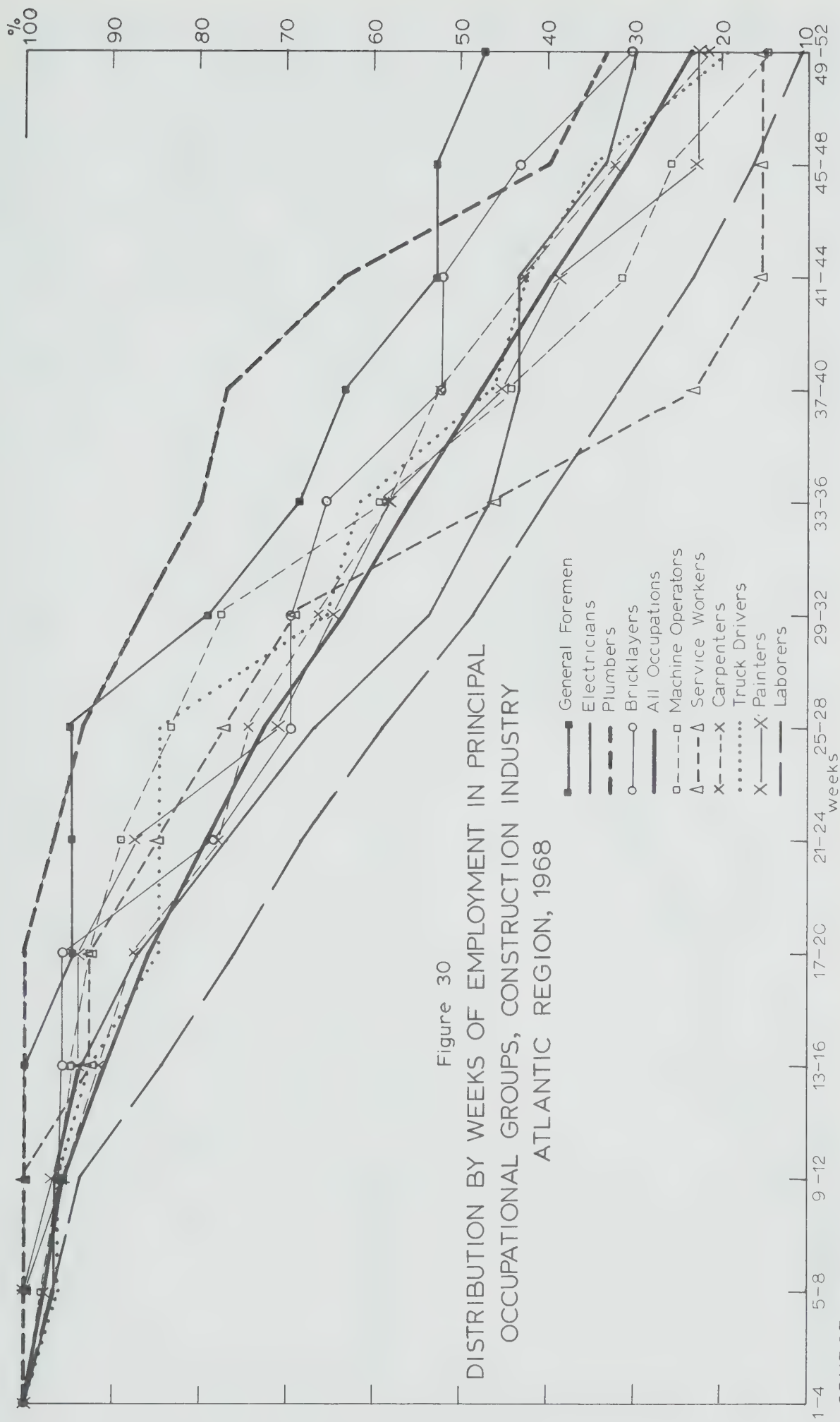
Plumbers and sheet metal workers again enjoyed on average the greatest employment security of all occupational groups in the construction industry in all regions. In Ontario they were joined in this respect by machine operators and electricians. Those with the least employment security in 1968 varied among the regions with laborers, truck drivers and painters most frequently falling into this category.

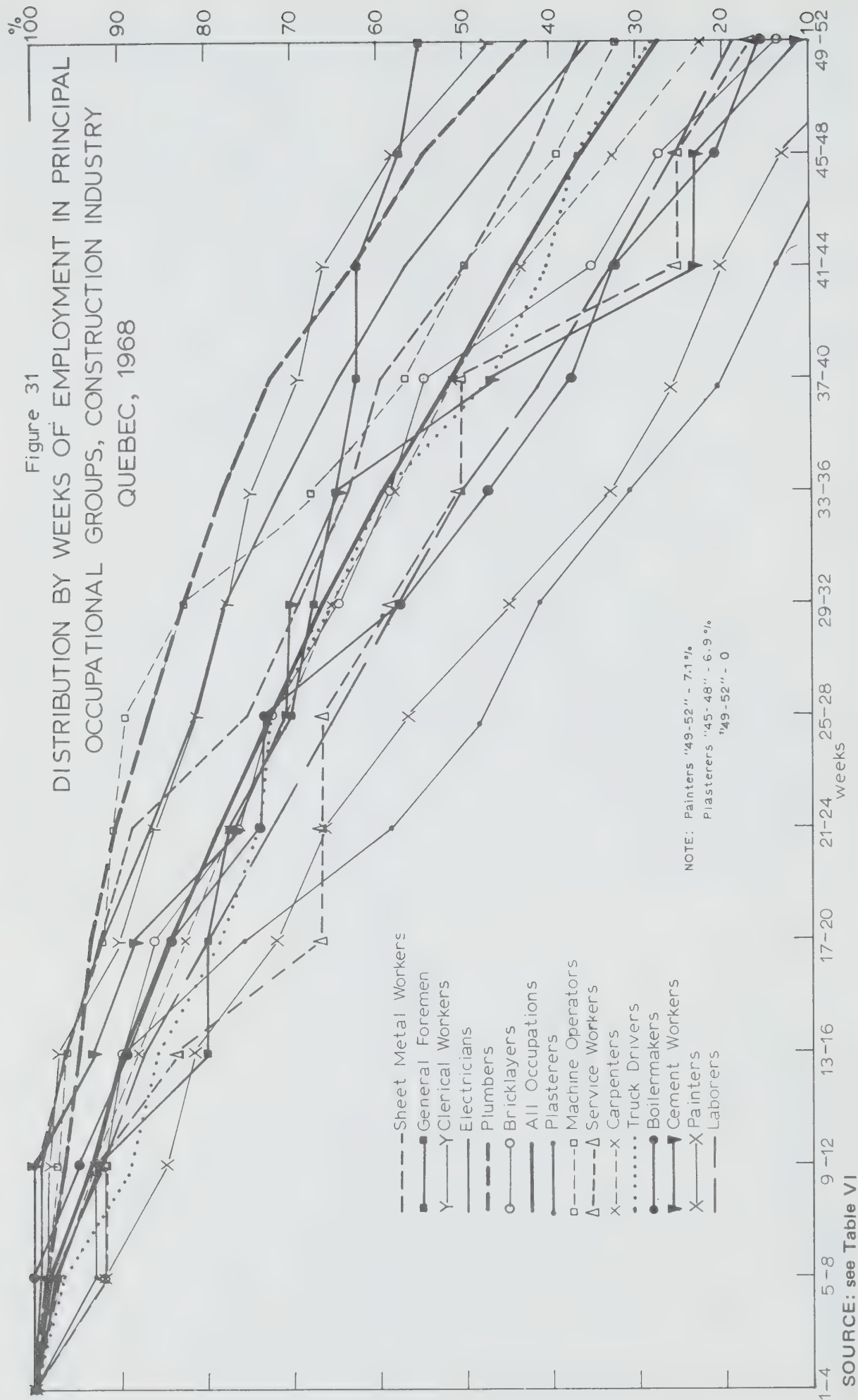
Besides portraying in a rather striking fashion the relative degrees of employment security of each occupational group within and between regions, these charts each contain a heavy black line showing the position of all construction workers. The location of this line on each of the regional charts, is significantly higher in the Ontario, the Prairie Region and British Columbia charts than in those for the other two regions. This average-weeks-of-employment line for all occupations did not fall below 50 per cent in Ontario until the 45 to 48 weeks period was reached. In the Prairie Region and British Columbia it dropped below 50 per cent in the 41 to 44 weeks period. This same level, on the other hand, was reached in the Atlantic Region and Quebec in the 37 to 40 weeks period.

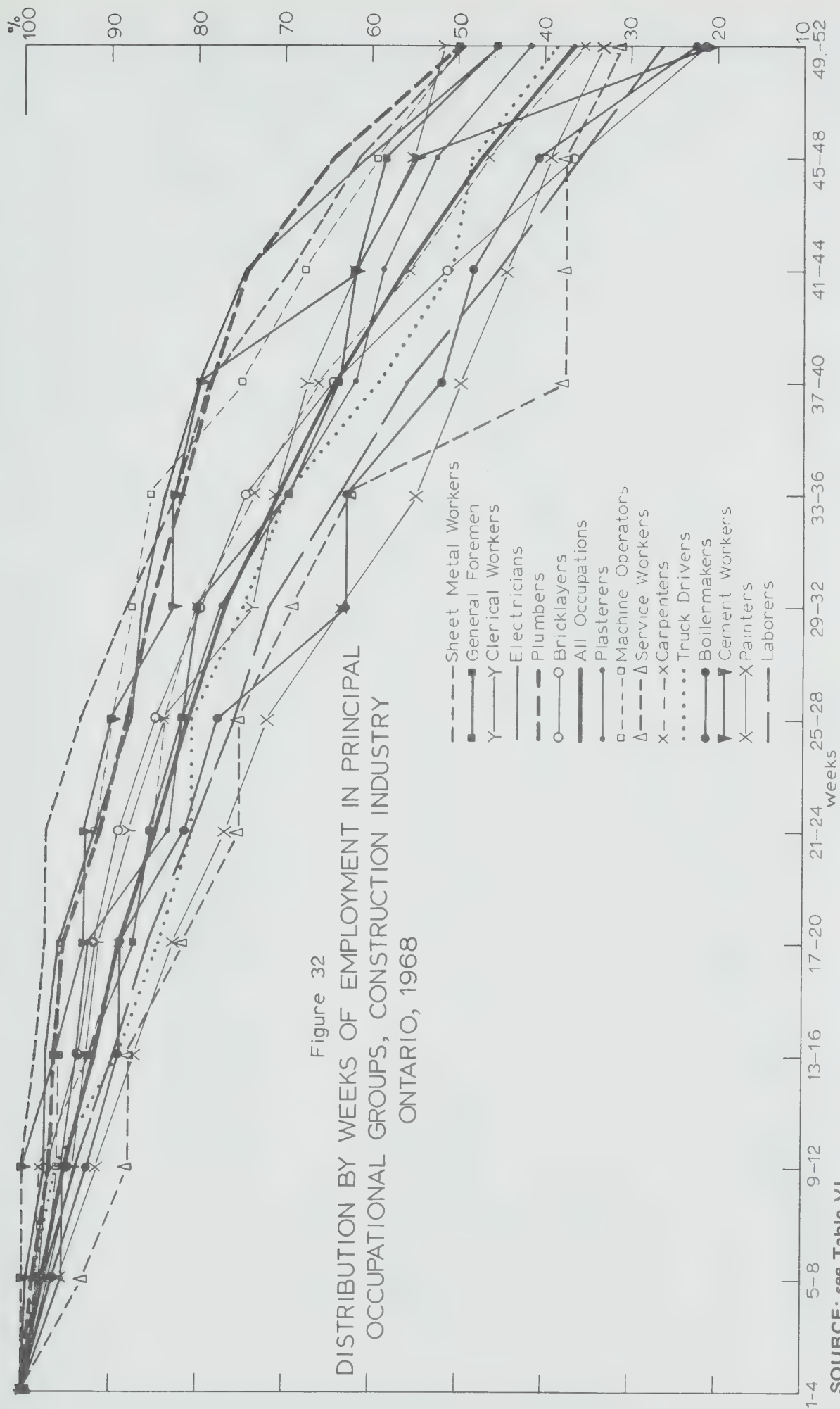
Employment – Industrial Comparison

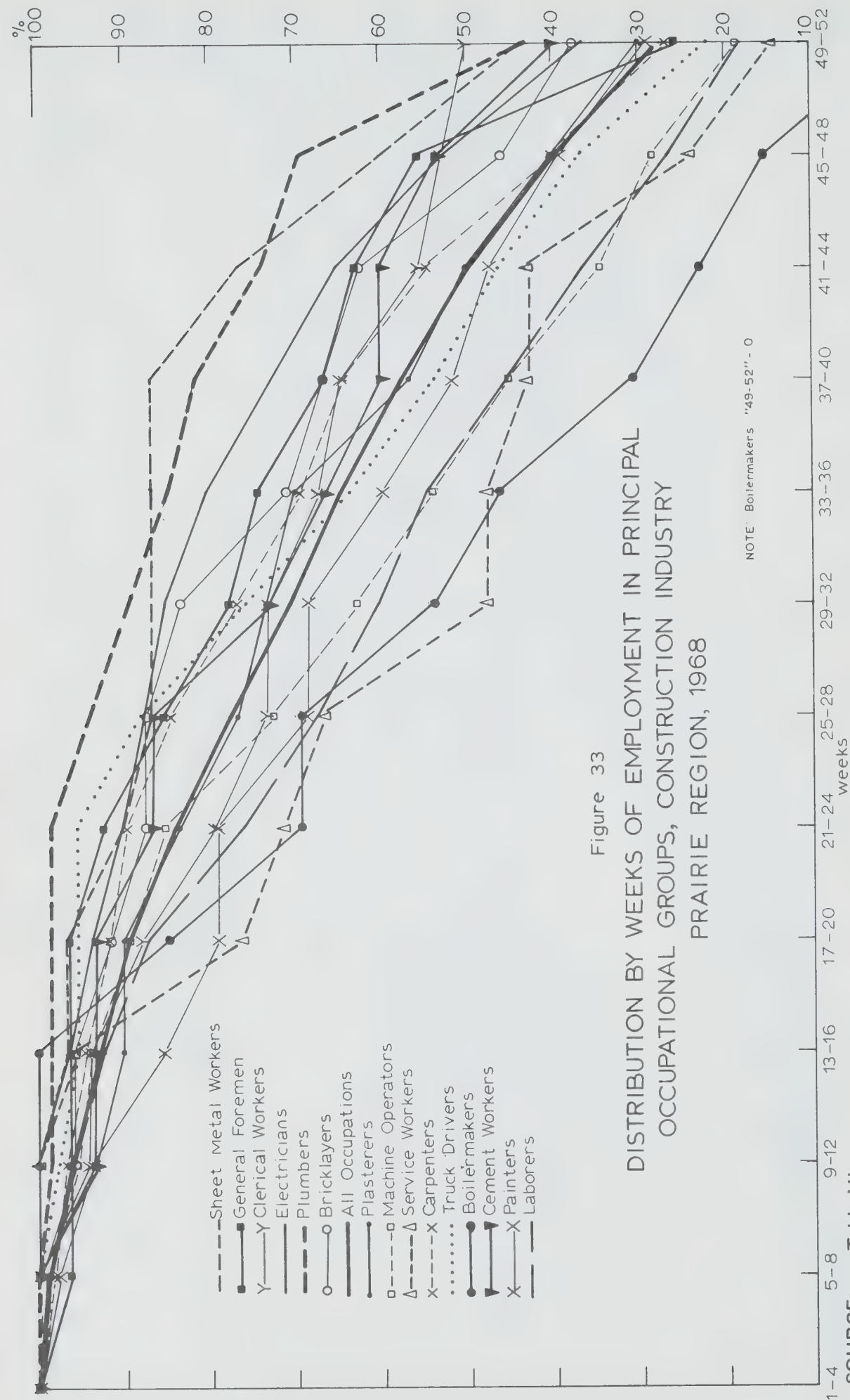
The position of construction workers with respect to the length of their annual employment is generally inferior to that of those employed in other sectors of the economy except in most primary industries. The situation which prevailed in 1968 can be seen in Table XVI based on estimates derived once again from the Unemployment Insurance-National Revenue sample survey. On average, construction workers contributing to unemployment insurance in that year were employed seven weeks less than those in manufacturing, mining and finance. On the other hand construction workers in general had somewhat more employment in 1968 than farm workers and significantly more than those engaged in forestry, fishing and trapping. In terms of annual earnings those contributing to unemployment insurance during the year in the construction industry fared better on

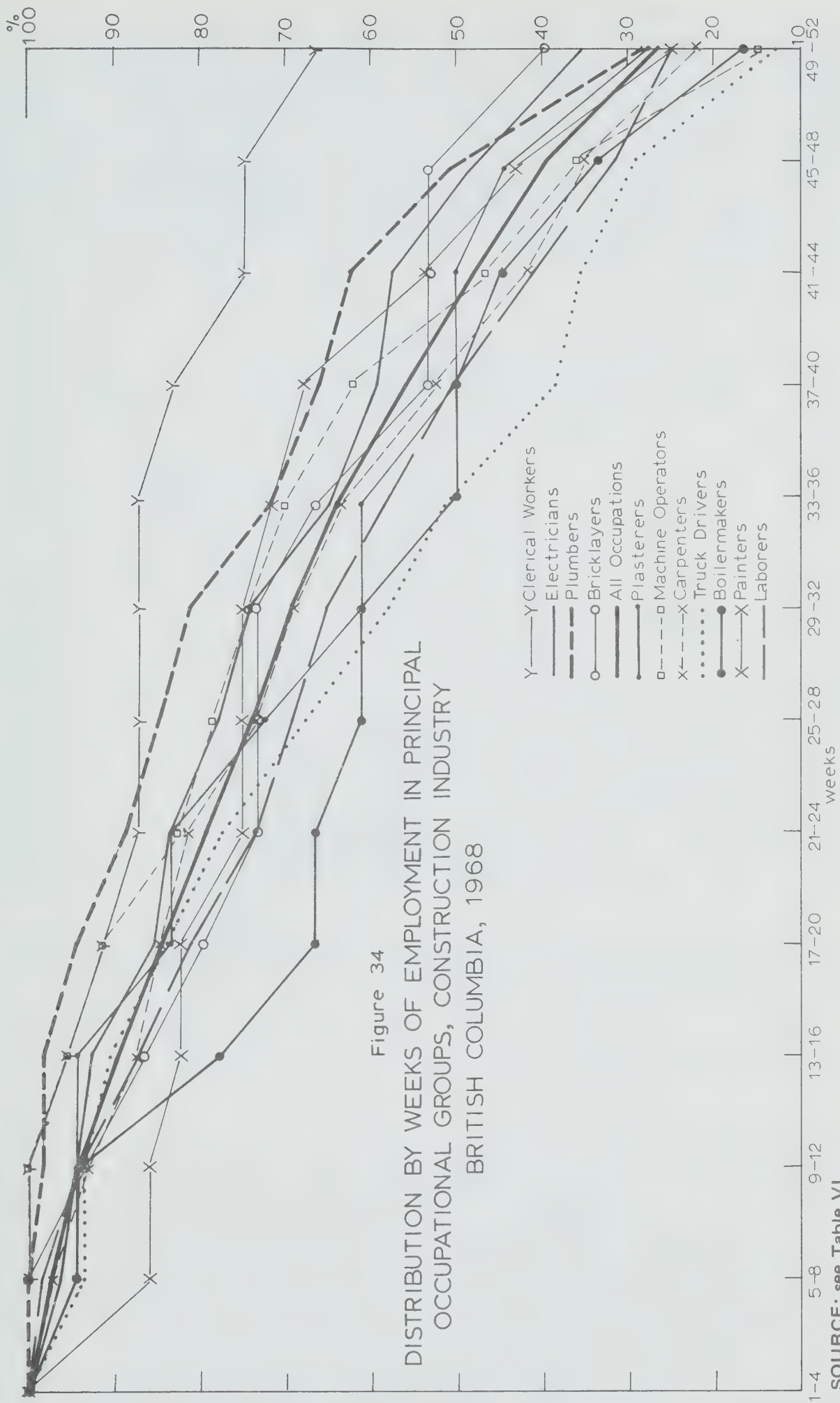
¹⁷The average estimated length of employment in 1968, as shown in Table VI, was 36 weeks.











average it is estimated than those in manufacturing and in all other categories except mining and transportation. These averages, it must be emphasized, cover only those who contributed to unemployment insurance in 1968. An indication of the numbers who did not contribute, consisting essentially of salaried employees receiving over \$105 per week up to June 29, 1968 and over \$150 per week on and after June 30 of that year and of other specific categories excluded by legislation and regulation, may be obtained from comparing columns one and two in Table XV. The excluded workers were particularly large in agriculture, services and public administration.

TABLE XVI
 Estimated Contributors to Unemployment Insurance, their Average
 Weeks of Employment and Annual Earnings by Industries, Canada, 1968.

Industry	Labor Force ^a (000)	Total Contrib- utors (000)	Average Weeks of Employment	Annual Average Earnings \$
Agriculture	557	39	34	2,700
Forestry	97	77	30	3,800
Fishing and Trapping ^b	28	31	23	1,700
Mines and Oil Wells	124	99	43	5,800
Manufacturing	1,839	1,435	43	4,800
Construction	538	362	36	5,200
Transport and Communication	704	429	41	5,200
Trade	1,304	785	40	3,600
Finance, Insurance and Real Estate	333	188	43	3,700
Business and Service Industries	1,883	548	39	3,000
Public Administration and Defence	475	147	38	4,100
Unspecified	135	1,335 ^c	20	2,600
TOTAL	8,019 ^c	5,475	35	3,800

^aAverage for each month in 1968.
^bThe contributors to unemployment insurance in the case of fishing also include own account workers and employers. The number no doubt contains some included for labor force purposes, in agriculture, forestry and other industries.
^cIncludes armed services.

Source: *The Labour Force*, Statistics Canada and Unemployment Insurance-National Revenue Data Base, See Table VI.

The overall impression left from this analysis is that for most workers in the construction industry employment is highly irregular, relatively short in number of weeks per year, and widely varied in terms of annual earnings from the many on the one hand with little attachment to the industry to the relatively few on the other hand who enjoy a high level of job security. Clearly the instability that has long characterized construction in Canada has had important human and economic consequences in terms of employment and related earnings. There have been other ways in which this same instability has had an economic and a social impact. One of these is in the changing pattern of wage rates in construction and elsewhere in the economy.

Wages – Annual Index of Hourly Rates

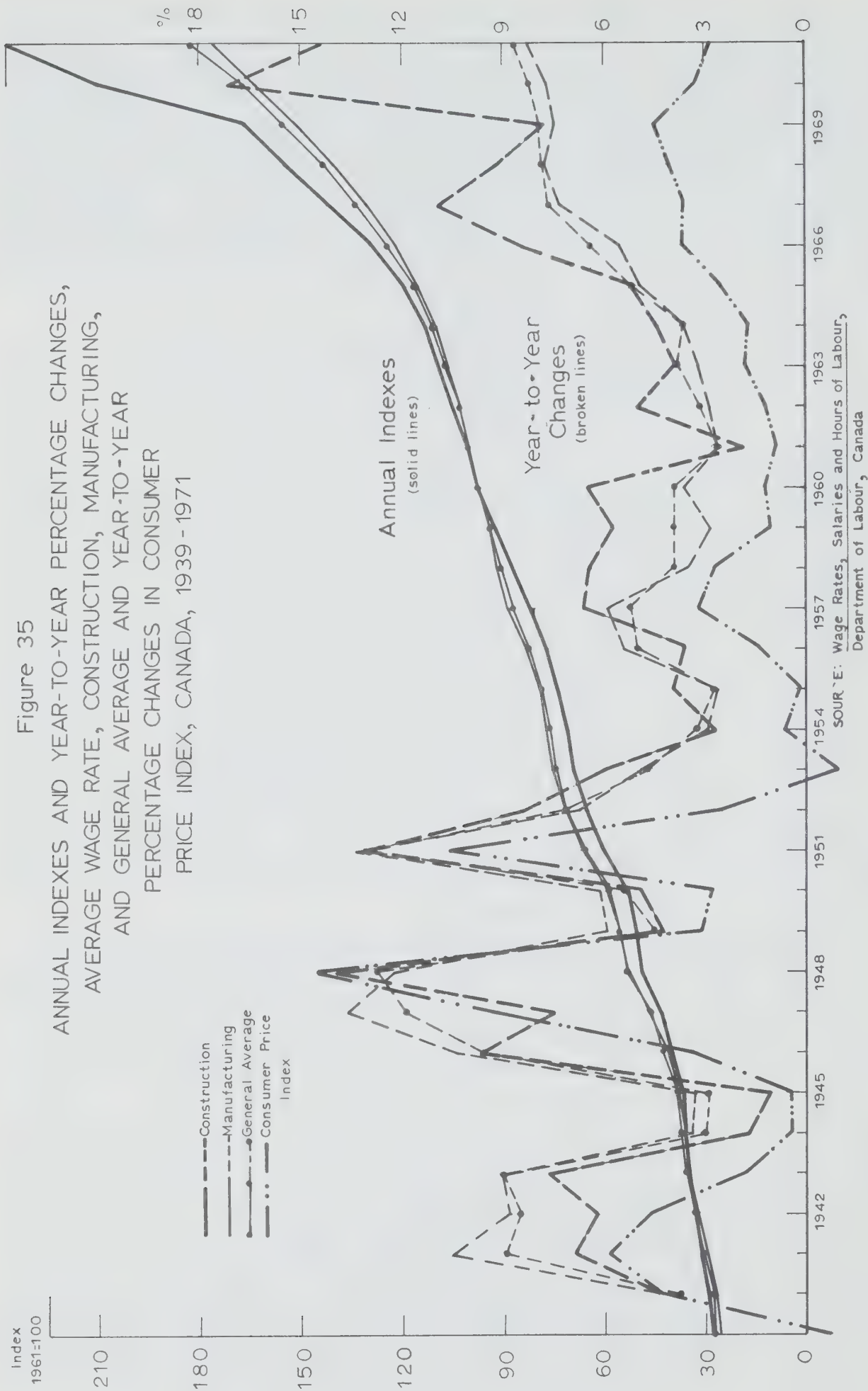
The long-term trend in wage rates in the construction industry is presented in Figure 35. Over the 30-odd years since 1939 the annual index of hourly rates for construction, as compiled by the Canada Department of Labour and based on 1961 equal to 100, has increased from 28 to 170. Over the same period the annual index of hourly rates in manufacturing and in all industries covered by the annual Canada Department of Labour wage survey increased by about the same amount. It will be seen, however, from Figure 35 that wage rates in manufacturing and in all industries rose more rapidly than did those in construction in most years before 1961. The reverse has been the case since that time.

The annual rate of increase in these three series has been highly uneven over the three decades. Sharp and frequent fluctuations have occurred. These become apparent when year-to-year percentage changes in the indexes are charted. This has been done also in Figure 35. During the early 1940s wage rates increased sharply rising in manufacturing by 10 per cent from 1940 to 1941. Output in this industry was greatly stepped up, due to the wartime defence and related requirements. After the wage controls, introduced in 1941, took effect the annual increases fell to less than four per cent in manufacturing and to less than two per cent in construction. Sharp yearly increases again occurred in the immediate post war period. These ran to more than 13 per cent per year. They fell off in 1948 and 1949 only to rise rapidly once more to more than 13 per cent in 1951 following the Korean Crisis in 1950. They were back to less than three per cent in 1954 and 1955. The construction boom of 1956 was a principal factor in a further upward movement but this time the level reached was just under six per cent in manufacturing and just over six in construction. Since then there have been further fluctuations but these have been clearly less pronounced than in the earlier decades. It is significant, however, to note that the year-to-year changes in this more recent period, unlike those during the previous 20 years have been much sharper in construction than in manufacturing and in the industrial composite.

It will be noted that the year-to-year percentage changes in the consumer price index, also shown in Figure 35, follow a similar course to that of those in wage rates. Throughout the period of over 30 years there were only two in which the consumer price index declined, namely 1939 and 1953. On the other hand the increases in 1947 and 1948 were particularly sharp. They reached a level of 15 per cent giving rise to the appointment of a Royal Commission on Prices.¹⁸ Since the 1948 peak of 15 per cent and a lower one of 11 per cent three years later the year-to-year changes in the consumer price index have been more moderate. They have not been significantly less in all recent years than those in average wage rates in construction, manufacturing and the industrial composite.

Over the 10 years from 1961 to 1971 the wage rate index in construction rose by 124 per cent. This compares with 33 per cent in the consumer price index which means that real wages in construction over the decade rose by 68.4 per cent. Over the same period, wages in the manufacture of durable goods increased by just over

¹⁸Cf. *Report of the Royal Commission on Prices*, King's Printer, Ottawa, Vol. 11, 1949, pp. 171 - 187.



50 per cent, while those in the industrial composite less construction rose by 80 per cent. Real wages in these two categories hence rose by 12.8 and 35.3 per cent respectively over the 10 years or by much less than those in construction.

Data are also available covering basic union hourly wage rates in individual building trades since 1961 in 14 separate areas across Canada. These data covering some 12 construction trades, are presented for 1961, 1965 and 1972 in each of these areas and as a Canadian composite for all of them in Table XVII. In all trades wage rates in the 14 areas taken as a whole more than doubled between 1961 and 1972 with the largest percentage increases occurring in the case of laborers, reinforcing steel erectors, heavy equipment operators and crane operators.

The increases in basic wage rates were not only much smaller but had less dispersion among them during the first half than during the second half of the 11 year period. In 1966 the indexes for all areas combined, based on 1961 equal to 100, ranged between 122 and 134. By 1972, when they had risen to an average of 228, the lowest index was 200 and the highest was 250. During the first four years, 1961 to 1965, the weighted index rose annually on the average by 4.2 per cent while during the last four years, 1968 to 1972, the annual increase averaged 10.6 per cent, rising to 12.8 in 1970 and then declining to 9.4 in 1972¹⁹.

It will be noted in Table XVII that over the 10 years from 1961 to 1971 the weighted index for all these basic union rates, representing as they do by far the largest part of organized construction workers in Canada, increased from 100 to 208. Meanwhile, as indicated above, the general wage rate index compiled annually by the Canada Department of Labour increased to 224. Since the latter covers all workers in the industry this comparison suggests that wage rates on the average for non-organized workers in construction may have risen more rapidly during the 1960s in Canada than they did for union members in the industry.²⁰

Since 1961 the largest increases in union construction wage rates have occurred on average in the Ottawa, Saint John and Hamilton areas. The indexes in these three areas have increased over the 11 years by 164, 159, and 151 respectively. Conversely the smallest increases have been in the St. John's, Regina and Winnipeg areas, ranging from 90 per cent in the capital area of Newfoundland to 107 per cent and 115 per cent in the similar areas of Saskatchewan and Manitoba.

Among the individual trades, laborers received least in money wages in all areas, with the lowest hourly rate in 1972 paid in St. John's of \$2.83 and the highest in Windsor of \$5.55. On the other hand, partly because of the low level of wages paid in 1961 to laborers and to some other groups with relatively few skills, they received the highest percentage increases over the period. In Saint John, for example, by 1972 the rates for laborers and reinforced steel erectors had risen by 225 and 219 per cent respectively. Similarly those of cement finishers in Halifax increased by 226 per cent and heavy equipment operators in Ottawa by 251 per cent.

The highest construction wages in 1972 were paid in Hamilton with eight of the 12 trades, included in Table XVII, receiving \$7.00 or more per hour; in Toronto with four; and in Windsor and Vancouver with two in each case in this category.

¹⁹Cf. *Construction Price Statistics*, 62-066, Feb. 1973, Statistics Canada, p. 8.

²⁰Cf. *Inflation, Unemployment and Incomes Policy*, Prices and Incomes Commission, p. 51 and Appendix B, p. 20.

TABLE XVII

Basic Union Hourly Wage Rates and Indexes for Major Construction Trades in Selected Areas and Canada, 1961, 1966 and 1972^a

(Index 1961 = 100)

Center	Carpenter \$	Crane Operator \$	Cement Finisher \$	Electrician \$	Laborer \$	Plumber \$	Re- inforced Steel Erector \$	Struc- tural Steel Erector \$	Sheet Metal Worker \$	Heavy Equip- ment Operator \$	Brick Layer \$	Painter (1961=100) \$	Weighted Average Index
St. John's													
1961	1.92	1.92	1.74	2.22	1.48	2.18	1.92	2.33	1.85	1.67	2.24	1.70	100
1966	2.25	2.00	2.13	2.79	1.69	2.45	2.20	2.64	2.27	1.80	2.63	1.97	116
1972	3.54	2.98	3.40	4.66	2.83	4.53	3.87	4.53	4.03	2.90	3.90	3.09	190
Index 1972	184	155	195	210	191	208	202	194	218	174	174	182	190
Halifax													
1961	2.04	2.00	1.67	2.30	1.47	2.23	1.66	2.56	1.92	1.75	2.30	1.76	100
1966	2.50	2.42	2.08	2.74	1.88	2.81	2.23	2.92	2.55	2.17	2.71	2.21	124
1972	4.64	4.77	5.45	5.36	3.89	5.23	4.29	5.45	5.23	4.57	5.45	3.99	238
Index 1972	228	239	326	233	265	235	258	213	272	261	237	227	238
Saint John													
1961	1.87	1.75	2.10	2.00	1.10	2.00	1.21	2.48	1.61	1.50	2.10	1.75	100
1966	2.34	2.00	2.58	2.55	1.42	2.45	1.48	2.79	1.99	1.80	2.55	2.09	124
1972	4.64	4.14	5.02	5.53	3.57	5.00	3.86	5.45	4.73	3.85	5.02	4.13	259
Index 1972	248	237	239	277	325	250	319	213	294	257	239	236	259
Quebec													
1961	2.02	1.99	1.94	2.10	1.64	2.10	1.94	2.60	2.04	1.99	2.24	1.94	100
1966	2.66	2.61	2.56	2.98	2.32	2.98	2.56	2.32	2.65	2.61	2.96	2.55	135
1972	4.81	4.96	4.71	5.07	4.30	4.72	4.96	5.32	4.81	4.86	5.01	4.71	239
Index 1972	238	249	243	241	262	225	256	205	235	244	224	243	239
Montreal													
1961	2.36	2.46	2.16	2.50	1.76	2.63	2.06	2.56	2.36	2.19	2.56	2.26	100
1966	3.19	3.47	2.91	3.38	2.52	3.60	2.84	3.30	3.19	2.99	3.33	3.93	136
1972	5.21	5.32	4.96	5.65	4.30	5.65	4.96	5.32	5.42	4.99	5.43	5.09	225
Index 1972	221	208	230	226	244	215	241	208	230	228	212	225	225

Ottawa	1961	2.37	2.25	1.80	3.40	1.51	2.82	2.00	2.82	2.79	1.75	2.61	1.90	100
	1966	3.03	3.14	2.65	3.95	2.09	3.56	2.68	3.30	3.31	2.50	3.28	2.36	130
	1972	6.10	6.69	5.22	6.89	4.55	6.87	6.02	6.98	6.86	6.14	6.21	4.71	264
	Index 1972	257	297	290	251	301	244	301	248	246	351	238	248	264
Toronto	1961	2.98	3.06	2.64	3.56	2.02	3.40	2.66	3.07	3.47	2.58	3.22	2.68	100
	1966	3.67	3.82	3.26	4.20	2.68	4.11	3.34	3.54	3.89	3.32	3.74	3.10	122
	1972	6.83	7.33	6.05	7.58	4.99	7.26	6.41	7.01	6.86	6.73	6.54	6.09	225
	Index 1972	229	240	229	213	247	214	241	228	198	261	203	227	225
Hamilton	1961	2.94	2.85	2.40	3.40	1.88	3.27	2.20	3.07	2.85	2.45	2.95	2.40	100
	1966	3.66	3.77	3.02	3.95	2.50	3.85	3.05	3.54	3.67	3.40	3.66	3.00	125
	1972	7.05	7.71	5.86	7.84	5.39	7.64	6.39	7.01	7.63	7.21	7.20	5.97	251
	Index 1972	240	271	244	231	287	234	291	228	268	294	244	249	251
Windsor	1961	2.70	3.25	2.28	3.00	2.06	3.10	2.33	3.08	2.86	2.45	2.88	2.13	100
	1966	3.45	3.72	3.34	3.30	2.58	3.35	3.00	3.57	3.43	3.40	3.48	2.83	123
	1972	6.30	6.63	6.07	6.98	5.55	7.15	5.73	6.83	7.39	5.98	7.02	5.99	247
	Index 1972	233	204	266	233	269	231	246	222	252	244	244	281	247
Winnipeg	1961	2.50	2.00	1.95	2.80	1.65	2.80	1.85	2.80	2.47	1.90	2.70	2.20	100
	1966	2.90	2.38	2.33	3.38	2.03	3.38	2.13	3.20	2.87	2.15	3.15	2.50	118
	1972	5.18	5.21	4.34	5.75	3.93	6.00	4.47	5.65	5.18	4.71	5.33	4.68	215
	Index 1972	207	261	223	205	238	214	242	202	210	248	197	213	215
Regina	1961	2.25	2.00	1.80	2.34	1.56	2.55	1.75	2.90	2.36	1.80	2.56	2.05	100
	1966	2.74	3.00	2.12	3.06	1.99	3.06	2.40	3.25	2.88	2.12	3.05	2.40	123
	1972	4.40	5.09	4.04	5.32	3.36	5.32	4.33	5.65	5.32	4.46	4.71	3.98	207
	Index 1972	196	255	224	227	215	209	247	195	225	248	184	194	207
Edmonton	1961	2.63	2.40	2.48	2.92	1.88	2.80	2.28	2.84	2.85	2.09	2.89	2.20	100
	1966	3.16	3.11	2.84	3.38	2.24	2.35	2.79	3.35	3.31	2.61	3.36	2.50	119
	1972	5.45	5.79	5.08	6.34	4.44	5.95	5.28	6.33	6.20	5.30	5.58	5.30	217
	Index 1972	207	227	205	217	236	213	232	223	218	254	193	241	217

TABLE XVII (Continued)
Basic Union Hourly Wage Rates and Indexes for Major Construction Trades in Selected Areas and Canada, 1961, 1966 and 1972^a
(Index 1961 = 100)

Center	Carpenter \$	Crane Operator \$	Cement Finisher \$	Electrician \$	Laborer \$	Plumber \$	Re- inforced Steel Erector \$	Struc- tural Steel Erector \$	Sheet Metal Worker \$	Heavy Equip- ment Operator \$	Brick Layer \$	Painter \$	Weighted Average Index (1961=100)
Calgary													
1961	2.62	2.40	2.10	2.88	1.88	2.75	2.30	2.84	2.72	2.09	2.88	2.30	100
1966	3.21	3.11	2.80	3.32	2.24	3.34	2.91	3.35	3.10	2.61	3.40	2.72	121
1972	5.45	5.79	5.08	6.34	4.36	6.29	5.70	6.33	6.16	5.30	5.58	5.30	220
Index 1972	208	227	242	220	232	229	248	223	227	254	194	230	220
Vancouver													
1961	2.92	3.19	2.78	3.26	2.19	3.14	2.78	3.12	3.01	2.98	2.99	2.84	100
1966	3.54	3.79	3.35	4.22	2.84	3.77	3.56	3.80	3.45	3.58	3.66	3.56	123
1972	6.37	6.36	5.91	7.12	4.99	7.00	6.55	6.55	6.54	5.54	6.17	6.16	217
Index 1972	218	199	213	218	228	223	236	210	217	186	206	217	217
Composite Index ^b													
1966	126	130	128	125	134	126	131	121	122	129	122	123	126
1971	205	207	212	205	228	203	222	194	206	210	194	209	208
1972	223	240	232	224	250	200	246	215	223	244	212	228	228

a. These union rates which apply in all cases to straight-time hourly compensation in basic trade categories, relate mainly to non-residential construction.
b. Composite index for all 14 areas.

Source: *Construction Price Statistics*, 62-006, Feb. 1973, Statistics Canada.

Electricians, crane operators, plumbers, sheet metal workers, and structural steel erectors were among the top wage earners in all areas. Of the 14 areas the lowest rates in 1972 were paid in St. John's, ranging from \$2.83 per hour for laborers to \$4.66 for electricians; in Saint John from \$3.57 for laborers to \$5.53 for electricians; in Halifax from \$3.89 for laborers to \$5.45 for cement finishers, structural steel erectors and bricklayers; in Quebec from \$4.30 for laborers to \$5.32 for structural steel erectors; in Montreal also from \$4.30 for laborers to \$5.65 for electricians and plumbers; in Winnipeg from \$3.93 for laborers to \$6.00 for plumbers; in Regina from \$3.36 for laborers to \$5.65 for structural steel erectors; in Edmonton from \$4.44 for laborers to \$6.34 for electricians and in Calgary from \$4.36 for laborers to \$6.34 for electricians.

Wages – Weekly

The trends in average weekly wages and salaries for construction workers, for the industrial composite, and for the industrial composite less construction, are presented in Figure 36 over the years 1945 to 1971. In construction average weekly wages and salaries have risen from \$31 in 1945 to \$188 in 1971, or by 507 per cent over the 26 years.

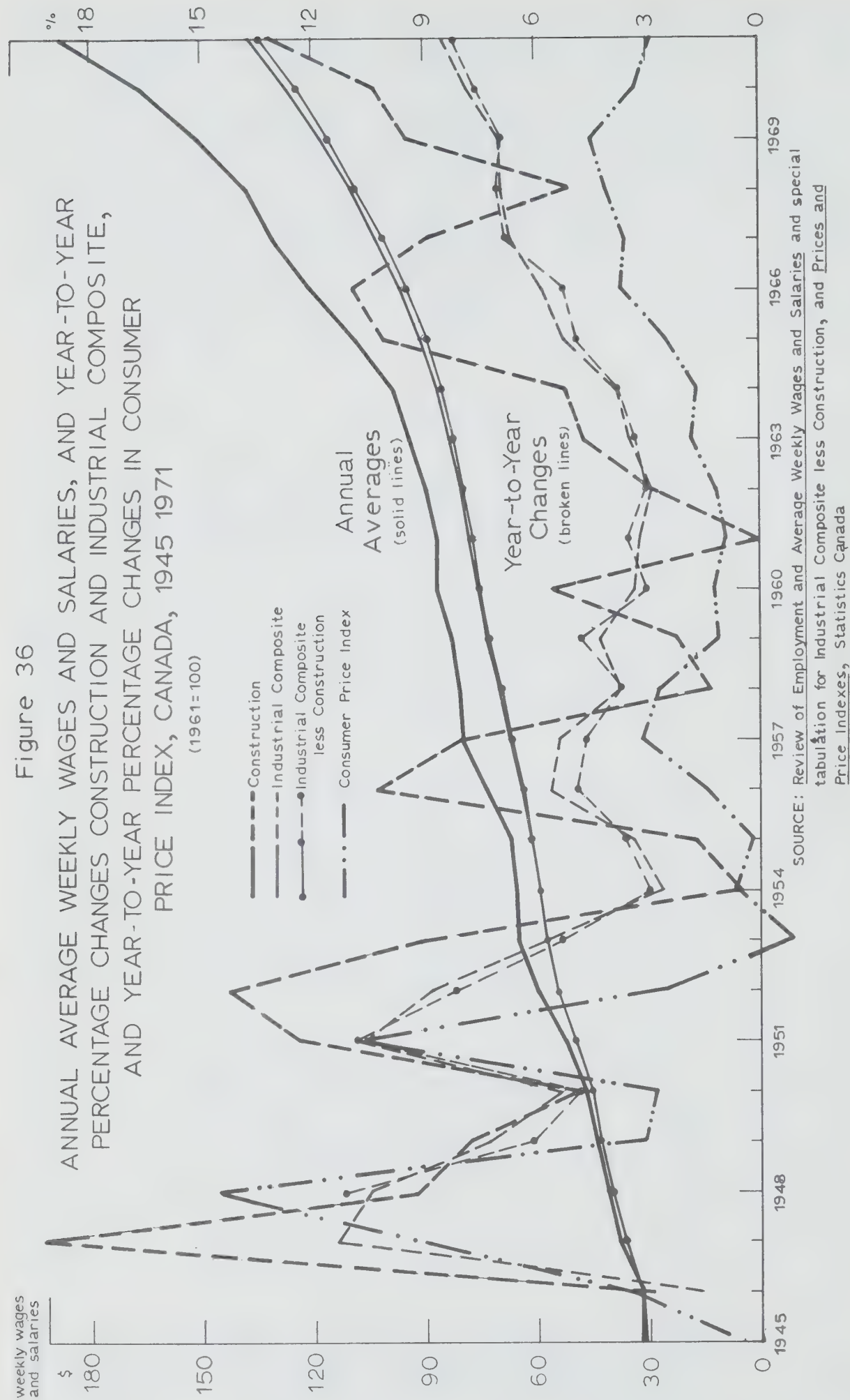
As noted earlier in the case of wage rates, weekly wages and salaries in other industries were on average higher than those in construction. In 1945 they stood at \$32 or one dollar a week more than in construction. By 1971 they had risen to \$138, which in that year was \$50 less than the average weekly earnings in construction.

Several important factors have affected the level of weekly earnings in construction. These in turn help to explain the much larger increase in construction earnings compared with those in most other sectors of the economy. One of these has been the generally strong demand for construction since 1945 compared with the previous 15 years when construction, aside from wartime necessity, was virtually at a standstill. This acted as a depressant on the industry, and at the same time created a large backlog of demand. Moreover, under the post war conditions it became relatively easy for any increased labor and other costs to be passed on by construction contractors to their clients.

A new and important development, examined more fully below, has been the increased level of skills in the industry which has accompanied far-reaching technological changes. In several building trades the typical worker today is a more highly qualified technician than was his counterpart in 1945.

A third element has been the not unnatural insistence, in the face of accelerating prices, other inflationary forces and the continuing disruptions caused by seasonal and longer-run employment insecurity in construction, on higher wage rates and weekly earnings to offset anticipated short falls in both annual employment and earnings.

Related to all of these factors has been the ability of unions especially where their strength and co-ordinated action were superior to that of their employers to gain an advantage in collective bargaining. The developments in this respect are also examined in more detail below.



Business Organizations, Sales and Profits

There has been a rapid increase in the number of business establishments in the construction industry particularly since 1952. In that year, it will be noted in Figure 37, there were just over 2,400 construction firms in Canada reporting to the Department of National Revenue. Eighteen years later the number had risen to, or on average by, nearly 1,000 additional corporations per year.

While this rapid expansion in the industry was taking place numerous bankruptcies were occurring each year.²¹ Although in most years the demand for construction was strong leading to the creation of new business ventures, there were also high risks involved arising in large part from instability in construction operations. During years when construction demand slackened somewhat the toll in bankruptcies increased, notably in 1960, 1962-63, and 1970, as will be seen in Figure 37B.

Annual data on total sales of construction corporations first became available in 1953. Here again the trend as will be noted in Figure 37C has been steadily up, although the annual rate of increase has been clearly less than that for the numbers of firms.

In any volatile industry profits cannot be expected to follow a steady course. The fact that construction is no exception in this respect is illustrated in Figure 37D in the case of net annual profits before tax and profits as a percentage of sales.

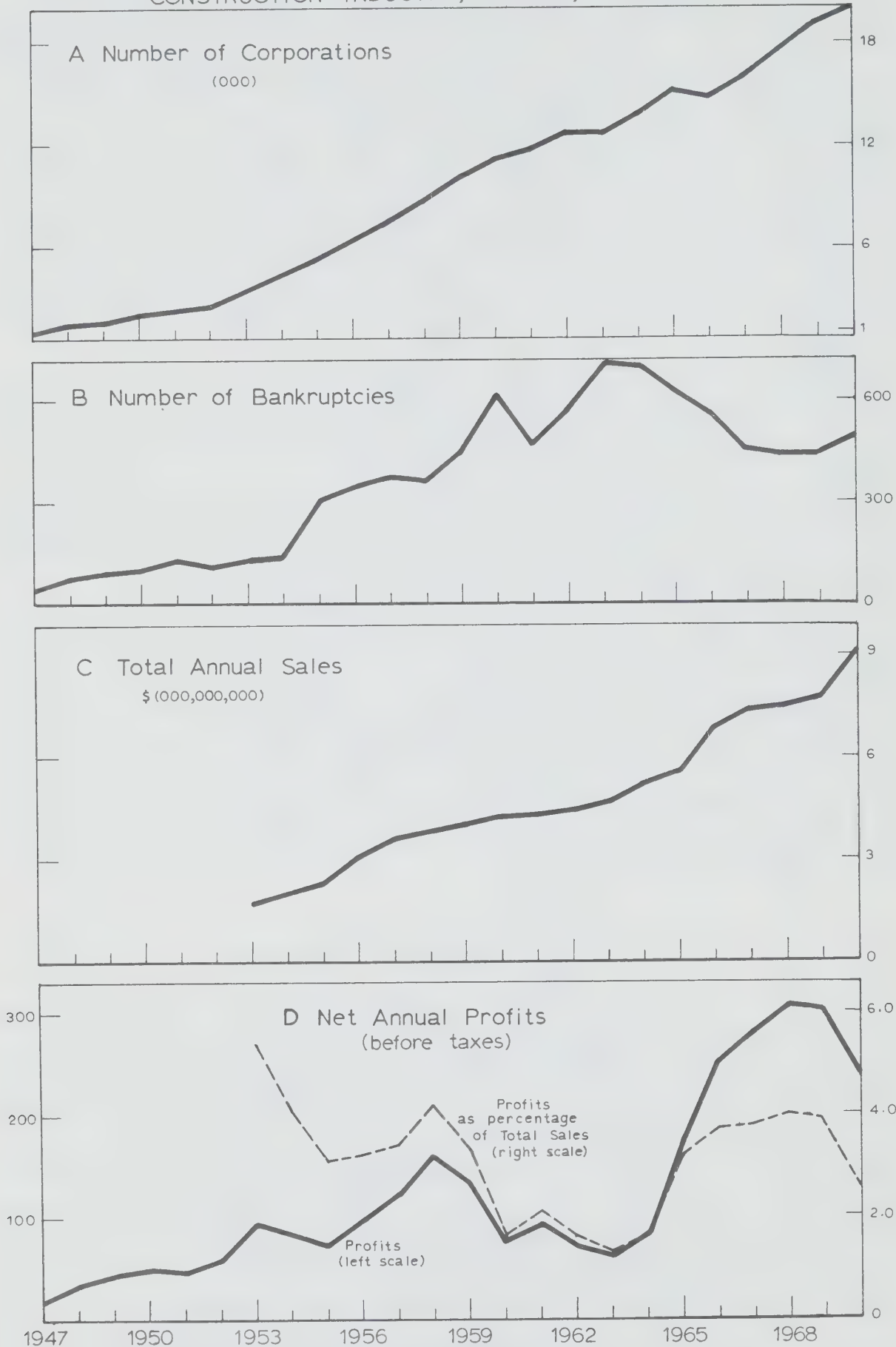
The year-to-year changes in the number of corporations, bankruptcies, annual sales and net profits, are set forth in Figure 38. It is not surprising that the fluctuations have been much more marked in the case of profits and bankruptcies than in the number of corporations and in their annual sales. While the changes in the number of firms and in sales have both tended to level off in recent years, profits continued to show sharp increases, notably from 1964 when net profits before taxes as a percentage of total sales was 1.6 per cent, to 1968 when this ratio had increased to four per cent. In 1969 it remained at 3.9 per cent and then dropped in 1970 to 2.5 per cent.

Collective Bargaining – Trends

Several key factors have influenced collective bargaining in construction in Canada during recent years. Some of these have been of an external character while others have operated essentially from within the industry. Excessive and often prolonged demand pressures have been of dominant importance among the former in many local and regional construction market situations. Those pressures, all too frequently associated with the sharp peaks and valleys in construction operations noted earlier made it easier during years of rapid expansion for unions to put forward and maintain strong bargaining positions and more difficult for contractors to resist them successfully. In the absence of any concerted and sustained effort to remove these underlying and deeply disturbing market conditions it was not

²¹The average number of bankruptcies per year from 1961 to 1971 in construction in Canada was 540. In manufacturing where the total number of incorporated firms is somewhat greater, the average number was 313.

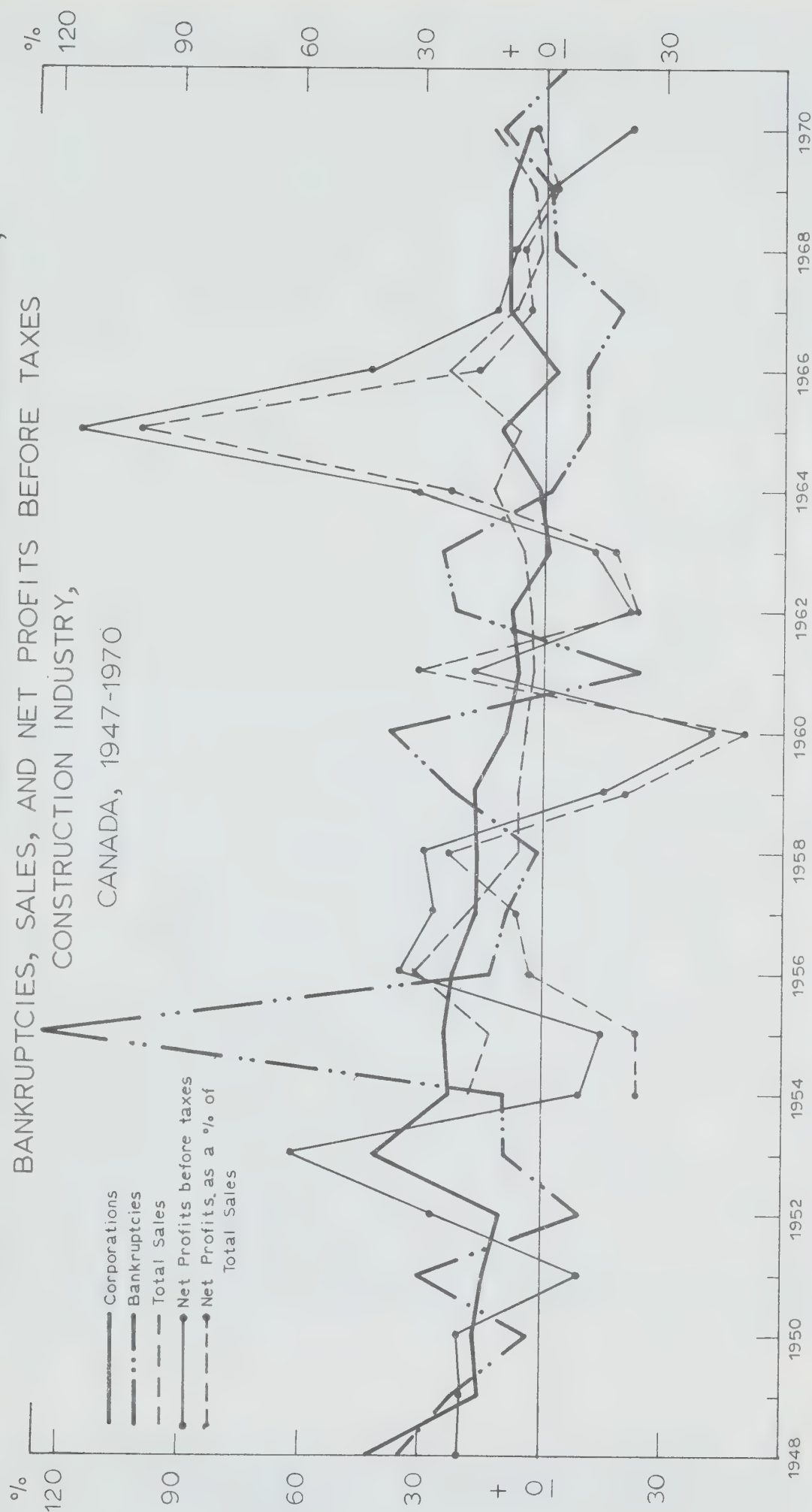
Figure 37
 BUSINESS ESTABLISHMENTS AND THEIR FINANCIAL POSITION,
 CONSTRUCTION INDUSTRY, CANADA, 1947-1970



SOURCE: Total sales data not available on comparable basis before 1953.
 Part Two, Corporations, Department of National Revenue
 and Corporations Financial Statistics, Statistics Canada

Figure 38

YEAR-TO-YEAR PERCENTAGE CHANGES IN NUMBER OF CORPORATIONS,
BANKRUPTCIES, SALES, AND NET PROFITS BEFORE TAXES
CONSTRUCTION INDUSTRY,
CANADA, 1947-1970



surprising that the excesses they begot fanned the already mounting inflationary flames, not only within the construction industry but elsewhere in the economy.²²

Within the industry a number of developments have affected the nature and course of collective bargaining in Canada over the past decade. Some of these internal factors have centered around workers and their unions or around employees and their associations or lack of associations. Others have sprung from collective bargaining procedures themselves while still others have been the result of legislative action which has stemmed mainly from internal developments.

One of the most significant of these developments has been the growth in membership of the principal worker organizations. After falling off from an estimated total of 154,000 in 1961 to 144,000 in 1962, union membership in the building trades in the construction industry in Canada appears to have increased to 250,000 in 1972. This expansion in union organization more than kept pace with the increase in paid workers in the industry; thus, in 1961, 50 per cent of all construction workers were organized. Eleven years later the corresponding percentage had risen to 62.²³

The years of most rapid expansion in union membership in the construction industry over the past decade were 1965 and 1966. In each of these years, it will be seen in Table XVIII, over 20,000 new members were added. These were also the years as noted earlier of sharpest increase in construction operations during the sixties. All individual unions were not expanding, however, at the same pace. Those with the fastest growth were sheet metal workers, electricians, operating engineers and plumbers. In the first two cases membership listed in construction has more than doubled over the past decade. On the other hand several other unions have shown little expansion. Among these are the carpenters, plasterers and lathers. As a consequence the relative size of the building trades unions listed in 1971 in Table XIX has in several cases changed sharply from that in 1961.

Union security provisions in collective agreements covering the building trades have changed little over recent years although they have at times given rise to serious worker employer difficulties during agreement negotiations and at other times. These difficulties have centered around the extent to which unions are able to influence the numbers and quality of the workers supplied on specific jobs. Various forms of union shop arrangements, the Rand formula, and hiring with preference given to union members, are the most common forms of union security. The hiring halls operated by the unions and recognized in many construction collective agreements, have long played an important part in manning arrangements in the industry. The need for a closer link between these hiring halls and the Canada Manpower Offices and for greater joint union, contractor government participation in all aspects of manpower training, placement and utilization are becoming more widely accepted.

²²Cf. Appendix D.

²³Cf. *Union Growth in Canada, 1921-1967*; and *Industrial and Geographical Distribution of Union Membership in Canada, 1968-1971*, Canada Department of Labour and *The Labour Force*, Statistics Canada. Paid workers in these Department of Labour studies, it should be noted, are for January of each year, roughly corresponding to the annual union membership survey date.

Jurisdictional disputes between unions have been among the most stubborn problems facing the construction industry. They have disturbing consequences not only for the workers involved but for contractors and others who may in fact be relatively innocent bystanders.²⁴ Some progress in resolving the basic problems involved has been achieved through improved administrative machinery for dealing with such disputes. Meanwhile, however, technological advances have posed new jurisdictional problems between crafts which are jointly affected by them.

The duration of collective agreements became an important factor in influencing some union demands for increases in wages and other benefits during the late sixties. Two notable examples of this were five year agreements negotiated by the plumbers in British Columbia and by the pipe-line welders in the Prairies and Ontario. In each case, what appeared to be reasonable increases in wage rates when the settlements were made in the mid-sixties proved to be much less than those obtained two or three years later by other bargaining groups in the industry. Consequently strong pressures developed among the members before these agreements came to an end to obtain large increases, not only as a catch up, but also to protect themselves in the expectation of further substantial increases in the future. These longer agreements made in good faith by both parties were pioneer steps in bringing about greater stability both in labor-management relations and more generally in the industry. They would have achieved more, however, had they been backed up by appropriate action on the part of other unions and employers in the industry and by public bodies.

On the employer side, the most important development affecting collective bargaining has been a deliberate move towards more coordinated and unified action on both a sector and area basis. This action has been instigated by the contractors largely in response to a recognition that stronger bargaining power on their part is required to meet the well organized strength of the unions. As a result new employer agencies have been established in several provinces. These include Construction Labour Relations Associations in British Columbia and in Ontario, and similar bodies in other provinces. All of these have as their expressed purpose careful development of their bargaining positions and work towards a common approach throughout all sectors of the industry. These steps are being accompanied by a trend towards bargaining on a broader area basis, a move supported increasingly by both contractors and unions throughout the country.

Steps taken by a number of provincial governments to establish procedures for certifying employers associations for bargaining purposes in the construction industry have served in some instances to stimulate and support efforts by contractors to strengthen their bargaining position. Action in this respect has gone farthest in Quebec, where provincial-wide bargaining is now required by statute on the part of construction employer associations and union federations.²⁵

²⁴Cf. *Construction Labour Relations* by H. Carl Goldenberg and John H. G. Crispo, Canadian Construction Association, 1968, especially "*Jurisdictional Disputes*" by Gérard Dion, pp. 333-375.

²⁵Cf. *Construction Industry Labour Relations Act*, Province of Quebec, February 1969.

TABLE XVIII

Union Membership Reported as Employed in the Construction Industry by Trades, Canada, 1961-1971^a

Union	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Carpenters — United Brotherhood of Carpenters and Joiners of America	40,900	33,500	34,900	35,100	35,600	40,000	41,600	42,900	40,100	41,000	55,200
Laborers — Laborers' International Union of North America	24,000	22,000	22,000	23,300	26,300	32,300	35,300	33,800	34,500	38,200	36,300
Plumbers — United Association of Journey-men and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada	17,700	17,000	16,600	17,000	17,500	20,100	26,200	26,800	29,100	30,200	31,600
Building and Wood Workers — National Federation of Building and Wood Workers, Inc. (CNTU)	15,200	14,800	15,200	23,300	24,000	15,700	17,600	20,300	20,200	23,200	16,800
Electricians — International Brotherhood of Electrical Workers	7,800	9,500	10,200	12,100	13,100	15,900	17,200	19,300	21,800	24,700	31,300
Bricklayers — Bricklayers, Masons and Plasterers' International Union of America	7,800	7,200	7,500	7,500	7,600	8,100	8,800	9,400	10,100	10,500	11,500
Iron Workers — International Association of Bridge, Structural and Ornamental Iron Workers	7,600	6,800	7,100	6,300	7,300	8,500	9,300	9,400	9,700	9,500	10,800
Sheet Metal Workers — Sheet Metal Workers International Association	6,700	7,000	7,100	7,500	8,300	10,700	10,400	11,400	11,700	12,900	5,600
Painters — International Brotherhood of Painters and Allied Trades	6,400	5,100	5,100	5,200	6,400	7,700	9,000	9,200	8,700	6,000	9,800
Operating Engineers — International Union of Operating Engineers	5,200	8,800	9,000	9,100	10,200	12,200	15,800	16,600	17,000	17,800	16,900
Truck Drivers — International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America	3,800	1,200	1,700	2,200	2,400	5,300	5,900	3,700	3,500	3,600	6,500
Plasterers — Operative Plasterers' and Cement Masons' International Association of the United States and Canada . .	3,700	3,500	3,200	3,000	3,400	3,700	3,500	3,700	3,900	3,900	4,800
Lathers — Wood, Wire and Metal Lathers International Union	1,600	1,000	1,000	1,100	1,100	1,300	1,900	2,000	2,100	2,200	2,000

Asbestos Workers – International Association of Heat and Frost Insulators and Asbestos Workers	1,400	1,400	1,400	1,400	1,400	1,400	1,600	1,700	2,000	1,900	2,400	2,400
Elevator Constructors – International Union of Elevator Constructors	1,300	1,200	1,100	1,400	1,500	1,700	2,000	2,000	2,000	1,600	1,500	2,200
Boilermakers – International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers ^b	300	700	1,600	1,500	1,600	2,500	700	800	3,000	3,000	2,700	2,700
Cement Workers – United Cement, Lime and Gypsum Workers' International Union . .	–	800	800	800	1,000	1,200	1,300	1,000	1,000	–	–	–
Other Unions ^c	2,600	2,500	1,500	1,200	2,400	1,500	1,600	2,700	2,100	1,000	3,600	3,600
TOTAL	154,000	144,000	147,000	159,000	171,000	190,000	210,000	217,000	221,000	238,000	250,000	250,000

a. The figures in all cases must be regarded as approximate only. Prior to 1971 all union locals were requested at the beginning of each calendar year to report their total membership and the industry in which most of their members were employed. All of their members were then included in this principal category for industrial classification purposes. For the building trades most members of locals are employed in the construction industry but there are instances where the majority work in manufacturing, transportation, or some other industry. This explains, in part, variations from year to year in membership figures for some individual unions. More boilermakers, for example, were included under manufacturing than under construction in 1961 and 1962 and again in 1967 and 1968; the reverse was true in other years covered in this Table. In the case of the United Cement Lime Gypsum Workers, all the members of locals were included under manufacturing in 1961, 1969 and 1970. The 1971 figures were coded for each employer of the local's members and should, therefore, be more exact, although less comparable to the figures given for years prior to 1971. This difference shows up particularly in the case of Sheet Metal Workers.

b. Figures supplied separately by the International Vice-President for Canada of this union indicate an increase in total membership in Canada from 5,900 for the period ending June 30th, 1964, to 7,500 in 1971. Of these 2,400 and 4,200 were reported by construction lodges. The remainder were divided between shop and railroad members. Cf. letter from John D. Carroll dated June 14, 1972.

c. Other unions, with locals reporting at the beginning of 1971 most of their membership in the construction industry and these members totalling more than 100 at that time, were: International Association of Machinists, 1,000; United Steelworkers of America, 780; International Association of Marble, Slate and Stone Polishers, Rubbers and Sawyers, Tile and Marble Setters' Helpers, Marble Mosaic and Terrazzo Workers' Helpers, 460; National Council of Canadian Labour, 300; Christian Trade Unions of Canada, 270; and Christian Labour Association, 210.

General Note

Due to the basis on which these data are assembled by the Canada Department of Labour, these figures cannot be taken as reliable estimates of the numbers of union members in the construction industry in any one year. They are, however, useful as broad indicators of changes over time in the number of members of each union, and of all unions collectively, employed in the construction industry.

Source: Economics and Research Branch, Canada Department of Labour, Ottawa.

TABLE XIX

Total Membership in Selected Unions and in Numbers Classified in Construction Industry, Canada, 1961 and 1971.

Union	1961			1971			Percentage Increase 1961 to 1971		
	Total Union Membership ^a	Union Membership Classified in Construction Industry ^b		Total Union Membership ^a	Union Membership Classified in Construction Industry ^b			Total Union Membership ^a %	Union Membership Classified in Construction Industry ^b %
		Number	Total		Number	Total			
Carpenters	64,600	40,900	63	74,600	55,200	74	15	35	
Laborers	20,200	24,000	-e	38,500	36,300	94	91	52	
Plumbers	19,800	17,700	89	32,000	31,600	99	62	79	
Building and Wood Workers ^c . . .	18,800	15,200	81	19,500	16,800	86	4	11	
Electricians	35,700	7,800	22	55,000	31,300	57	54	300	
Bricklayers	5,300	7,800	-e	10,600	11,500	-e	100	47	
Iron Workers	9,700	7,600	78	14,400	10,800	75	48	42	
Sheet Metal Workers ^d	8,000	6,700	84	14,400	5,600	39	80	-16	
Painters	7,000	6,400	91	12,000	9,800	82	71	53	
Operating Engineers	14,600	5,200	36	24,900	16,900	68	71	225	
Truck Drivers	40,400	3,800	9	58,900	6,500	11	46	71	
Plasterers	4,000	3,700	92	2,600	4,800	-e	-35	30	
Lathers	1,100	1,600	-e	1,500	2,000	-e	36	25	
Asbestos Workers	1,400	1,400	100	2,400	2,400	100	58	58	
Elevator Constructors	1,300	1,300	100	2,200	2,200	100	59	59	
Boilermakers	6,200	-f	-	7,400	2,700	37	19	-	
Cement Workers	3,500	-f	-	4,700	-f	-	34	-	
TOTAL	261,900	154,000g	58	375,600	250,000g	67	43	62	

a.The figures for total membership of each union are reported to the Canada Department of Labour annually by the headquarters of the union. They avoid double counting and other problems faced in the industry estimates obtained from union locals.

b.As in Table XVIII the figures compiled for union membership by industry are reported annually in most cases by the union locals. In interpreting these union membership figures by industry it should be kept in mind that they are obtained for the most part from union locals and also that although in the building trades most members of locals are employed in the construction industry there are instances where the majority work elsewhere, see Table XVIII, footnote^a

c.Building and Wood Workers Federation of the Confederation of National Trade Unions.

d.See footnote a, Table XVIII.

e.Membership included under the construction industry in these cases exceeds that in the union as a whole. This is due to various factors including double counting which may occur in the case of union members working in more than one area, differences in the definition of "members" and some variation in the timing of membership counts during the year.

f.Less than 1,000.

g.Includes 2,700 members of other unions in 1961 and 3,600 in 1971. See footnote c Table XVIII. Source and additional interpretation of data, see Table XVIII.

Both employer and union bodies have also been giving more co-ordinated attention to industrial relations and associated problems on a national basis. The Canadian Construction Association, which has had since 1919 a Labor Relations Committee, named a full time staff member in 1958 to deal with these matters. Also in 1960 the Industrial Contractors Association of Canada was formed. This body serves in some respects as a counterpart of a similar national organization in the United States. The senior representatives in Canada of the international building trades unions had for many years an informal body known as the "Roadmen's" group. This body was formally recognized by the international headquarters of all the unions in 1968 and adopted the new name, Advisory Board for the Building Trades in Canada. In 1971 this Board established an office with a full-time secretary in Ottawa.

On a sector basis within the industry, some important steps have also been taken during recent years to bring about a fuller understanding of labor and related matters by employers. The Mechanical Contractors Association of Canada has made substantial progress in this respect. Working closely with the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada, a Joint National Policy Committee was established in 1968. This Committee meets regularly four times each year to discuss common manpower, training, industrial relations and related problems.

Collective Bargaining – Extent of Union Organization

There are no overall data yet which might shed light on the extent to which collective bargaining in construction in Canada has affected weekly hours of work and relative earnings of organized compared with non-organized employees of the industry. An attempt to gain some understanding of the respective positions of the two groups was made by the Prices and Incomes Commission in 1971 in co-operation with Statistics Canada. This consisted of matching the monthly Employment Survey returns from construction firms during March of that year with those from the same firms included in the annual Construction Industry Survey. The number of firms covered, their employees and the percentage of the latter who were members of unions are given in Table XX, for each of several categories of both general and trade contractors. In all cases, except general highway contractors, the proportion of union employees was substantially higher than non-union. It will also be noted that in all cases the numbers of firms with either 80 per cent or more of their employees in unions on the one hand, or with less than 20 per cent on the other, were much greater than those falling within any or all of the intermediate deciles. Thus it appears reasonable to use as the criteria for organized firms those with 50 per cent or more of their employees in unions.

Using this test, union membership in March 1971, in terms of employees, was highest in the mechanical and bricklaying trade contracting branches of the industry with 96 per cent and 92 per cent respectively. Of the other trades included in Table XX it was lowest in carpentry with only 52 per cent organized followed by excavating with 62 per cent.

TABLE XX

Extent of Union Organization, Monthly Survey of Firms, Construction Industry, Canada, March 1971.

Union Members as Percentage of all Employees								
	Total	0-19 %	20-39 %	40-49 %	50-59 %	60-79 %	80-100 %	Percentage with one half or more Union Members
Contractors								
Number of Establishments								
General Contractors								
Building	414	114	4	8	7	31	250	70
Highways ^a	180	115	5	1	3	6	50	33
Other Engineering ^b	62	18	2	1	1	4	36	66
Trade Contractors								
Mechanical ^c	196	14	2	2	4	9	165	91
Electrical	110	13	3	3	3	11	77	83
Painting ^d	61	6	—	1	—	4	50	88
Plastering ^e	58	7	1	1	—	6	43	84
Bricklaying	57	2	—	—	1	3	51	96
Roofing	36	6	1	—	1	4	24	81
Carpentry	16	7	—	1	—	—	8	50
Excavating	14	5	1	1	—	—	7	50
Number of Employees								
General Contractors								
Building	11,052	2,341	96	106	103	694	7,712	77
Highways ^a	4,700	3,078	88	22	78	199	1,235	32
Other Engineering ^b	2,063	279	47	150	10	85	1,492	77

Average weekly hours of work were somewhat higher in the non-union than in the union building and other engineering general contractors establishments, as will be noted in Table XXI. On the other hand no distinct difference showed up in most of the trade contractor categories except in the case of carpentry and painting where non-union hours appeared to be clearly higher. A much more striking contrast showed up between the average union and non-union earnings also set forth in Table XXI. The spread was greatest in the case of building general contractors where union firms paid wages averaging \$47 more per week and \$1.50 more per hour in March 1971 than did non-union firms. In the case of some trade contractors, however, notably those engaged in excavating work, higher hourly and weekly wages were paid on average by the non-union than by the union firms reporting. In this case, though, it should be observed that the total number of firms included in the survey was only 14.

A regional breakdown of these general and trade contractors is presented in Table XXII. In each case the number of firms, employees and average hourly earnings are shown separately for union and non-union firms. The number of firms included in the survey was not sufficient to permit a reliable comparison in all cases, notably for trade contractors in British Columbia. However, the data do reveal that elsewhere in Canada over 80 per cent of all trade contractors were organized in 1971. In Quebec the proportion of union firms was even higher; amounting to 98 per cent for trade contractors included in the survey and 97 per cent for general contractors. In British Columbia the proportion of general contractors organized was 84 per cent, in Ontario it was 57 per cent while in the Prairie and Atlantic Regions the corresponding percentages dropped to 34 and 22 respectively. In all cases average hourly earnings in March 1971 were higher in union than in non-union firms with the spread between the two greatest in British Columbia and in Ontario and least in Quebec. Average hourly earnings were higher also in trade contracting than in general contracting in all cases except in the non-union firms in the Atlantic Region. Once again the wide variations in regional earnings stand out, ranging from \$2.69 per hour in non-union trade contracting in the Atlantic Region to \$6.30 in union general contracting in British Columbia.

By examining the returns of these same firms one year earlier it has been possible to obtain an impression of the changes that occurred during this interval in average hourly earnings. All firms it will be seen in Table XXIII, recorded increases over the year from March 1970 to March 1971 ranging from an average of 39¢ to 84¢ per hour and from 12 to 26 per cent. In the case of the general contractors both the absolute and percentage increases over the year were greater for non-union firms in the building and other engineering contracting categories and the specialized electrical contracting. The reverse was true in the other groups included.

The timing of these large increases in earnings coincided, as was seen earlier, with a further stepped up demand for construction in several areas of the country and with the renewal of collective agreements providing in some cases for large catch-up amounts in wage rates and fringe benefits.²⁶ The increases in the level of negotiated wage settlements had a direct impact on non-union wage patterns in areas where

²⁶ See *Wages*, p. 71.

TABLE XXI

Extent of Union Organization and Comparison Weekly Hours and Earnings of Union and Non-Union Firms, Monthly Survey, Construction Industry, Canada, March, 1971

	Number of Establishments		Number of Employees		Average Weekly Hours		Average Hourly Earnings**		Average Weekly Earnings	
	Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union
Contractors										
General Contractors										
Building	288	126	8,509	2,543	38	39	5.08	3.58	181	134
Highway	59	121	1,512	3,188	43	42	4.63	3.49	176	145
Other Engineering	41	21	1,587	476	42	43	4.56	3.86	202	152
Total	388	268	11,608	6,207	39	41**	4.95	3.55	183**	141**
Trade Contractors										
Mechanical	180	16	10,897	391	39	40	5.32	4.20	207	163
Electrical	94	16	2,765	403	38	38	5.36	4.60	206	192
Painting	55	6	1,029	97	37	40	4.98	4.26	169	188
Plastering	50	8	1,404	174	36	36	5.20	4.20	188	154
Bricklaying	55	*	1,830	*	33	*	4.83	*	165	*
Concrete	29	*	1,613	*	37	*	4.84	*	170	*
Roofing	29	7	1,005	196	39	37	4.90	3.44	184	129
Tiling	24	*	581	*	39	*	4.89	*	178	*
Steel Erection	10	*	312	*	37	*	4.98	*	196	*
Carpentry	9	7	158	124	32	39	4.90	3.88	158	137
Excavating	8	6	186	99	39	41	3.88	3.97	157	161
Total	543	78	21,780	1,825	38**	38**	5.09	4.45	195**	165**

* Under six establishments or less than 90 employees.

**Weighted average using number of employees.

Source: See Table XX.

TABLE XXII

Union and Non-Union Establishments, Employees and Average Hourly Earnings, Monthly Survey of Firms, Construction Industry, Canada and Regions, March 1971

Contractors	CANADA		ATLANTIC		QUEBEC		ONTARIO		PRAIRIES		BRITISH COLUMBIA	
	Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union
Number of Establishments												
General Contractors	432	276	15	54	133	4	170	129	38	75	76	14
% Total	61	39	22	78	97	3	57	43	34	66	84	16
Trade Contractors	593	92	36	7	182	4	258	54	112	26	*	*
% Total	87	13	84	16	98	2	83	17	81	19	—	—
Total	1,025	368	51	61	315	8	428	183	150	101	—	—
% Total	74	26	46	54	98	2	70	30	60	40	—	—
Number of Employees												
General Contractors	14,882	6,621	483	1,534	4,212	48	5,568	3,236	1,893	1,476	2,726	327
% Total	69	31	24	76	99	1	63	37	56	44	89	11
Trade Contractors	23,099	2,038	1,166	146	6,116	161	12,309	1,274	3,278	449	*	*
% Total	92	8	89	11	97	3	91	9	88	12	—	—
Total	37,981	8,659	1,649	1,680	10,328	209	17,877	4,510	5,171	1,925	2,956	—
% Total	81	19	50	50	98	2	80	20	73	27	—	—
Average Hourly Earnings**												
\$												
General Contractors	4.95	3.55	3.31	2.78	4.31	4.22	4.84	3.76	4.46	3.65	6.30	4.00
Trade Contractors	5.09	4.45	3.63	2.69	4.74	4.66	5.63	4.66	4.65	3.81	*	*
Total	5.04	3.76	3.54	2.77	4.57	4.55	5.38	4.01	4.58	3.69	—	—

* Under six establishments or under 90 employees.

**Weighted averages using number of employees.

Source: See Table XX.

TABLE XXIII

Comparison Union and Non-Union Hourly Earnings, Monthly Survey of Firms,
Construction Industry, Canada, March 1970 and 1971

Contractors	Average Hourly Earnings											
	Number of Establishments		Number of Employees		1970				1971			
					Union	Non-Union	Union	Non-Union	Union	Non-Union	Union	Non-Union
	Union	Non-Union	Union	Non-Union	\$	\$	\$	\$	\$	\$	¢	¢
General Contractors												
Building	88	126	8,509	2,543	4.49	2.90	5.08	3.58	0.64	0.68	16	24
Highway	59	121	1,512	3,188	3.94	3.11	4.60	3.50	0.66	0.39	18	13
Other Engineering . .	41	21	1,587	476	4.12	3.08	4.60	3.90	0.48	0.82	12	26
Total*	388	268	11,608	6,207	4.33	3.02	5.00	3.60	0.67	0.58	16	20
Trade Contractors												
Mechanical	180	16	10,897	391	4.48	3.71	5.32	4.20	0.84	0.49	19	15
Electrical	94	16	2,765	403	4.64	4.00	5.36	4.60	0.72	0.60	16	15
Plastering	50	8	1,404	174	4.50	3.83	5.21	4.23	0.71	0.40	16	10
Total*	324	40	15,066	968	4.51	3.85	5.32	4.37	0.81	0.52	18	14

*Weighted average using number of employees.
Source: See Table XX. The same establishments were used in each category in 1970 and in 1971 in making the comparison between the two years and in arriving at the average hourly earnings in each case.

construction labor markets were tight, although with limited information presently available it is not possible to trace the extent of this influence. On the other hand where construction activity had fallen off and particularly in the presence of large numbers of unemployed building tradesmen, changes in union contracts had much less effect on non-union wages and working conditions. In fact in these circumstances there is a tendency for non-union firms to become more dominant in construction labor markets.²⁷ In any event it is clear that both union and non-union firms are much more sharply affected by the uneven demand pressures on the whole industry than they are by major differences in the actions of each other.

Collective Bargaining – General Observations

Some general observations can be made based on this examination of recent developments in collective bargaining in the construction industry in Canada. First, unions especially since 1966 have managed to advance their position successfully compared with earlier years and in comparison with other groups in the economy. Employers have realized that their position in bargaining has been relatively weak and requires substantial strengthening through better collective organization and appreciation of the basic issues involved. Clients, governments and the public have frequently been deeply disturbed by the results stemming from bargaining negotiations in the construction industry. They have had serious questions at times about these results but in most cases have been powerless to do much about protecting their own or the wider community interest even in the face of some strenuous and prolonged contractor-union conflicts. More firms have been undertaking new and repair building operations themselves with their own employees in the face of rapidly rising contract costs. Non-union workers and in some areas rival unions have provided effective competition to traditional building trades unions both in relatively tight and slack construction labor markets.²⁸ Out of the turmoil and strain, felt by contractors, unions, clients and governments, there appears to be a recognition on all sides that the industry and the economy face a serious common and underlying problem, namely instability in construction operations.

Productivity and Technological Change

The internal/external pressures affecting construction in Canada and in other countries over recent decades combined with some far-reaching technological changes have given rise to substantial gains in productivity in the industry. The

²⁷In some Canadian centers non-union firms have been able in recent years to compete successfully with union firms which previously held a dominant position e.g. high rise apartments in Edmonton. A similar condition has prevailed in several areas in the United States Cf. *Labor Management Relations in the Construction Industry*, D. Quinn Mills, Massachusetts Institute of Technology, Cambridge, 1972, p. 57.

²⁸Such competition has been provided, for example, in some localities of British Columbia by the International Woodworkers of America, of Ontario by the Christian Trade Unions of Canada, and in Quebec.

importance of achieving such gains, moreover, is being more widely recognized by both employers and workers as a basis for offsetting cost increases and for bringing about higher returns and standards of living for all associated with the industry.

In spite of its key position no single satisfactory measure of productivity in construction has yet been, or is likely soon to be, developed. It is clear, however, from the evidence available that output per man has increased rapidly in several trades; that the efficiency of contracting firms has been improving; and that the ratio of total product to the capacity of the industry as a whole has also been increasing.

Examples of productivity gains in the case of individual building trades are numerous. One of the most striking is that of crane operators who today play a much more prominent role in all types of heavy construction than was the case a decade ago. These operators now handle large and expensive equipment. In terms of output per day their productivity have increased many times over. Similarly in the case of plumbers, pipefitters, sheet metal and iron workers, armed with improved materials, larger and often prefabricated units, these tradesmen in a single day accomplish a great deal more than their fellow tradesmen did only a few years ago. Improved initial training and retraining have also made important contributions to the higher skills of building tradesmen and hence to their job competence. On the other hand many obstacles to improved productivity remain. These include outdated attitudes to projects and jobs on the part of both managers and workers and costly work practices which cannot be removed quickly. Contractors and unions, however, are recognizing that to retrain jobs, especially in the face of stronger competition from firms undertaking their own maintenance and other construction and from open-shop or non-union building establishments, work must be well planned and efficiently carried out.

Construction firms also have found it essential both through stronger competition and improved design in equipment and materials to examine more critically the organization of their firms, the crucial factors involved in submitting job tenders and the execution of their contracts. More emphasis as a result is being placed on the necessity of adequate training, on the attention that must be given to the human elements in planning and carrying out construction projects and on the importance of watching closely input-output relationships to ensure viable business enterprises. These in turn have led to productivity improvements that have yielded benefits to both employers and workers in the industry and to their clients.

Although there is a need to do so, relatively little attention has been paid to the achievement of productivity improvements in construction looked at from the standpoint of the industry as a whole. This does not apply, however, to work in building technology where significant progress has been made over recent years in Canada and in other countries. Notable among the activities in this respect are those carried out by the Building Research Division of the National Research Council, by provincial research bodies and by several specialized branches of the industry.²⁹

²⁹Cf. "Technological Change" by R. F. Legget, N. B. Hutcheon and W. G. Brown. *op. cit.* *Construction Labour Relations*, pp. 98-115.

Modular or three dimensional construction units and systems building are revolutionizing work on some projects particularly in high-rise structures where the repeated use of the same or similar prefabricated components is involved many times over.³⁰

In a broader industry setting there is a large potential for improvement in productivity. From the analysis carried out in this study it is clear that a substantial part of this potential lies in the enormous waste in manpower and equipment which continues to occur each year and from year to year due to the widespread instability in construction operations. This does not deny or fail to recognize the progress being achieved in other directions in the industry in Canada. Rather it poses the question at what cost to the industry and to the economy are the sharp peaks and valleys in construction operations permitted to persist. To this query the discussion now turns with reference more specifically to recent changes in prices and costs of building and other construction in various parts of Canada.

Prices and Costs in Residential Construction

A detailed analysis of the extent to which prices and costs of residential accommodation had increased in Canada since the mid sixties, was undertaken by the Prices and Incomes Commission in 1970.³¹ In addition, the relative importance of the principal factors affecting housing costs, namely, land, labor, materials, financing, technology and profits has been examined together with changes that can be identified in their character, quantity and cost. This has thrown into sharper focus the forces which have caused the cost of owning or renting a home to rise sharply since 1965 in most parts of Canada.

Residential construction has been studied in some detail not only because of its economic, but also because of its social, significance. Clearly, many factors have influenced the costs and prices of housing over the years. The design and size of houses have changed. The amount, skills and price of labor have changed. The types of materials and the form and method of their use are subject to continuous innovation. The kinds and number of appliances being introduced into housing are changing. The size of lot, the manner in which large tracts of land are now developed and the rapid escalation of property values and financing charges have affected costs. The dearth of quantitative information on some of these factors makes it impossible to be as precise as one would like about all of the influences affecting price and cost changes in housing. Besides fluctuations in demand pressures for housing have an important influence on costs and prices, and these, too, are difficult to measure in exact quantitative terms.

³⁰Cf. "Industrialized Building. Is it Good News or Bad? " *Job Scope*, Carlson Publications, Bethlehem, Conn. Vol. 5, No. 11, Aug. 1972, pp. 8-10.

³¹This analysis was carried out by Donald G. Laplante, assisted by E. Thomas Houston and Rex B. Nickson, under the general guidance of F. Leslie C. Reed, Director of Studies of the Price Review Division and Bertram G. Barrow, Commissioner.

— Demand for Housing

The demand for single-family housing at existing prices, as illustrated in Figure 39, has not increased over recent years in Canada as rapidly as growth in population and net family formation. During the 1960s construction of single-family dwellings remained in fact fairly constant at approximately 75,000 units per year. In the same period construction of apartment units more than doubled and exceeded 100,000 units in both 1968 and 1969.

All residential construction in recent years, as already observed, has accounted for slightly less than one third of all construction activity in Canada. Investment in new housing in 1969 was \$3,370,000,000, 18.6 per cent higher than in 1968. In 1969 house-building activity rose to a record of 210,000 dwelling unit starts; completions also increased to a record level of 196,000 units.

Housing for low-income groups also made significant advances in 1969 with 16,700 units being built under the National Housing Act (NHA) housing program for such groups. This compared with 12,400 units in 1968 and 8,500 in 1967.

The strong demand for housing in many parts of Canada through the sixties has been a major factor in the upward movement of construction costs and prices. Without a relatively buoyant market greater resistance to higher cost would almost certainly have developed. There was, however, a decline in housing starts in 1970 which mainly reflected increasing consumer resistance to high prices and financing costs.

— Trends in Housing Costs

Between 1961 and 1969 the average acquisition cost for new single-family housing financed under the National Housing Act, increased by about 43 per cent, from \$14,500 to \$20,800. During the same period the average down payment increased by 50 per cent from \$2,475 to \$3,900 and the monthly gross debt service charge including principal, interest and taxes almost doubled from \$105 in 1961 to \$191 in 1969.^{3 2}

The average size of single family dwellings has increased slightly since 1961. There has been a trend towards including more appliances as standard equipment in new homes. The move into the suburbs has tended to increase average lot size. Land speculation and increased financing charges have also been important factors in increasing housing costs in many areas. On the other hand, builders have realized savings through the introduction during the sixties of improved building techniques, greater offsite fabrication and materials which can be used more efficiently.

Housing prices and costs increased more rapidly after 1965 than before. This development is illustrated by the fact that the average price of a new, single-detached dwelling increased by 17 per cent from 1961 to 1965 and by 26 per cent from 1965 to 1969.

^{3 2}New single family housing financed through conventional mortgage sources exhibit the same characteristics as those financed under NHA as to rates of change over the 1965 to 1970 period.

Figure 39
 ANNUAL DWELLING STARTS, COMPLETIONS
 AND NET FAMILY FORMATION,
 CANADA, 1961-1971



SOURCE: Canadian Housing Statistics 1971, Central Mortgage
 and Housing Corporation, Ottawa

The two major cost components of house acquisition are the cost of land and the cost of construction. Between 1960 and 1964 the average cost of land for single-detached dwellings financed under NHA increased by 24 per cent. From 1965 to 1969 the increase was 36 per cent. The cost of building an average single-detached dwelling increased by 10 per cent from 1960 to 1964. The average size of finished floor area also increased between 1960 and 1964 by 8.5 per cent so that the average construction cost per square foot of dwelling increased by only 1.5 per cent. From 1965 to 1969, however, while the cost of construction increased by 23 per cent, the average finished floor area decreased by four per cent so that the average cost per square foot of construction went up by 28 per cent.

The two main components of construction costs are building materials and labor. Between 1960 and 1964 the price of residential building materials moved up an average of 2.7 per cent per year while the average annual rate of pay for construction workers rose by just over three per cent.³³ These increased costs, combined with productivity and efficiency gains, resulted in a general increase in the unit cost of house construction of some 0.3 per cent per year. From 1965 to 1969, however, material prices have gone up at an annual rate of three per cent while the average wage rates have risen by 7.7 per cent per year, increasing the per square foot cost of construction of a single detached dwelling by an average of 5.6 per cent each year. These and other related estimates of apparent cost changes in housing and house acquisition are given in Table XXIV.

TABLE XXIV
Apparent Average Annual Rates of Increase of Major Cost Factors in Housing, Canada,
1960 to 1969.

Cost Factor	Average Annual Increase 1960 to 1964 %	Average Annual Increase 1965 to 1969 %	Increase 1968 to 1969 %
Materials	2.7	3.0	5.3
Labor (on-site wage rates)	3.1	7.7	7.6
Construction (total per house)	2.0	4.6	9.5
Construction (square foot)	0.3	5.6	7.0
Land	4.9	7.1	12.2
Acquisition	2.5	5.1	10.0

– *Cost of New Bungalows and Apartments*

The accelerated cost increases of residential construction were most severe in major metropolitan areas of rapid growth. These were the areas where pressures for new housing were greatest and there is little doubt that demand pressures greatly influenced housing prices. To gain a better understanding of the changes taking place in these areas data were obtained on the prices of standard medium-sized

³³These and other data contained in this analysis are based on information supplied by Central Mortgage and Housing Corporation covering a substantial sample of new houses financed under the National Housing Act.

bungalows and typical apartment buildings in a number of urban centers over the years 1965 to 1969 and on the costs of constructing them. For this purpose average prices for new bungalows financed under the NHA were obtained for the period 1965 to 1969 in six metropolitan regions. Details on major cost components of such bungalows were also obtained and gave the results presented in Table XXV.

TABLE XXV
Percentage Changes in Cost Components of Bungalows, Selected Metropolitan Centers, Canada, 1965 to 1969^a.

Metropolitan Center	Percentage Increase or Decrease (–) in Cost of				Percentage Increase in Acquisition Cost %
	Land %	Labor %	Materials %	Total %	
Vancouver	60	42	29	33	31
Winnipeg	24	47	22	33	26
Ottawa	22	36	17	32	30
Toronto	65	26	6	35	47
Montreal	–30	47	20	18	–11
Halifax	44	42	25	27	32
Six Centers	31	38	20	30	26
Canada	35	38	15	23	26

^aThe bungalows were of a standard size financed in all cases under the National Housing Act.

Data were also obtained on the contribution of each of the major cost components to the total increase in the cost of acquiring a new bungalow under NHA financing. Estimated percentage contributions based on these data are given in Table XXVI for the six centers included in the analysis.

TABLE XXVI
Contribution of Separate Cost Components to Changed Acquisition Price of Bungalows in Selected Metropolitan Centers, Canada, 1965 to 1969.

Metropolitan Center	Percentage Contribution to Increase or Decrease (–) in Price of Bungalows			
	Land %	Labor %	Materials %	Profit %
Vancouver	38	27	13	22
Winnipeg	18	38	18	26
Toronto	42	24	12	22
Ottawa	14	40	29	17
Montreal	–36	–1	–55	–8
Halifax	17	32	28	23

In most of the metropolitan areas a locality was selected for more detailed analysis where there was known to be considerable building activity over the period 1966 to 1970. In Table XXVII percentage increases in cost components are given for comparative models of house types popular in the particular locality. The percentage increases in these cases over some of the same cost components included in earlier tables and several additional items.

TABLE XXVII
 Percentage Changes in Cost Components of Detached
 Single Dwellings in Specific Localities, Selected Metropolitan Centers, Canada 1966 to 1970.

Cost Component	Percentage Increase or Decrease (–) 1966 to 1970				
	Vancouver – Delta %	Winnipeg – Fort Garry %	Toronto – Scarbor- ough %	Ottawa – South %	Montreal – Dollard des Ormeaux %
Acquisition					
Land	115	31	79	30	15
Total Building	24	22	32	35	9
Profits	–18	–9	–18	–8	–10
Selling Price	39	25	46	34	10
Ownership					
Downpayment	38	45	78	8	17
Mortgage (First Only)	36	23	39	39	13
Interest Rate ^a	52	52	52	52	52
Principal and Interest Payments ^b	81	65	85	85	56
Investment (Mort gage plus down payment)	85	66	94	78	52
Municipal and Local Improvement Taxes ^c	27	18	29	56	28
PIT Charges ^d	88	53	71	79	48

^aNHA rates as of June 1st each year.
^bTwenty-five year repayment period.
^cRelate to each municipality named.
^dPrincipal, interest and taxes.

The land acquisition in Table XXVII is the price of serviced land, and total building covers the selling price of the building and thus reflects the cost of construction only. It will be noted that the increase in land values was particularly sharp from 1966 to 1970 in Delta and in Scarborough. In some of the cost of home ownership items, notably interest rates on mortgages, and principal and interest payments there was relatively little or no variation among localities. In other cases the differences were more marked. Thus the monthly PIT cost of owning a house, excluding maintenance and interest on the down payment, while increasing significantly in all cases from 1966 to 1970 varied from 48 per cent in the Montreal area to 79 per cent in the Ottawa and 88 per cent in the Vancouver areas.

An important factor affecting home ownership in Canada over recent decades has been the minimum income requirement established by the Central Mortgage and

Housing Corporation as a condition of guaranteeing loans.³⁴ Because of the rapid increase in the cost of home ownership, it has been necessary to increase the minimum income requirement in order to maintain a reasonable relationship between the cost of servicing a mortgage and the borrower's total income. Since the cost of home ownership has increased so rapidly, the minimum income requirement for a NHA loan has increased to a much greater degree than have average incomes. This changing relationship is illustrated in Table XXVIII using the same cost models in each of the selected metropolitan localities.

TABLE XXVIII
Comparison Percentage Increases in Minimum Gross Income Requirement and in Average Income per Employee, in Specific Localities, 1966 to 1970.

Income Item	Percentage Increase 1966 to 1970				
	Vancouver	Winnipeg	Toronto	Ottawa	Montreal
	— Delta %	— Fort Garry %	— Scarborough %	— South %	— Dollard des Ormeaux %
Minimum Gross Income Required by CMHC	88	53	71	79	48
Average Wage and Salary Income per Employee	28	27	30	30	30

While average wage and salary income per employee increased by 28 per cent in Vancouver, 27 per cent in Winnipeg and 30 per cent in Toronto, Ottawa and Montreal, minimum gross income requirements to finance detached single dwellings increased by 88 per cent in the Vancouver area, 79 per cent in Ottawa, 71 per cent in Toronto, 53 per cent in Winnipeg and 48 per cent in Montreal.

Similar data were assembled for new three-storey walk-up apartments built during these same years 1966 to 1970 in Halifax, Montreal, Ottawa, Toronto, Winnipeg and Vancouver. Information was also obtained on costs of construction and land for high-rise apartments built in Toronto between 1965 and 1970. The relative costs of land, materials and labor for these three-storey apartment buildings in the six metropolitan centers are given in Table XXIX.

Over the same period 1966 to 1970 the records on the construction of three-storey walk-up apartment buildings indicated that the costs had increased in the average by the following amounts: land, 27 per cent; materials, 16 per cent, and labor 34 per cent. These increases were highest in the case of land in Vancouver as will be seen in Table XXX, materials in Halifax and labor in Montreal. In land cost a decrease was again registered in Montreal, following the inflated values there during the Expo preparatory years. In both materials and labor the increases were lowest in Toronto, due in part no doubt in the former case to improvements in handling and perhaps size of orders and relative nearness to market. The relatively high

³⁴NHA regulations required during these years that the minimum gross income of the applicant be at least 3.7 times the monthly principal, interest and taxes (PIT) charges.

TABLE XXIX
Relative Importance of Land, Materials and Labor as Factors
in the Cost of Apartment Buildings, in Selected Metropolitan Centers, Canada,
1966 and 1970.

Metropolitan Center	Relative Cost of		
	Land	Materials	Labor
Halifax	5	52	43
Montreal	3	42	55
Ottawa	8	45	47
Toronto	16	38	46
Winnipeg	7	44	49
Vancouver	9	38	53
Average Six Centers	8	43	49

TABLE XXX
Percentage Changes in Land, Materials and Labor Cost of Apartment
Buildings in Selected Metropolitan Centers, Canada, 1966 to 1970.

Metropolitan Center	Percentage Increases or Decreases (–) 1966 to 1970 in Cost of		
	Land %	Materials %	Labor %
Halifax	42	27	35
Montreal	–33	15	53
Ottawa	26	16	28
Toronto	35	3	16
Winnipeg	29	17	41
Vancouver	47	17	36
Average All Centers	27	16	34

proportion of immigrants engaged in residential building in Toronto no doubt exerted an influence in the case of labor. In total the higher costs in all six centers added up to a 25 per cent increase. Of this higher land costs were responsible for two per cent, materials for seven per cent, labor for 16 per cent and overhead and profit for three per cent.

In contrast to three-storey lower apartment buildings, the cost of construction per square foot of rentable space in high-rise apartment buildings erected between 1965 and 1970 increased only moderately. The greater economies of scale and use of prefabricated materials have offset cost increases in composite residential dwellings to a greater extent than they have in single family housing. The price of high-rise apartment suites, however, has increased since 1965 because of higher land prices and the trend towards larger suites and more amenities.

The cost experience on high-rise projects in Metropolitan Toronto outside the inner city itself is traced for each year 1965 to 1970. In Table XXXI the land cost converted to a building square foot basis increased over the six years by 70 per cent. Meanwhile building costs per square foot declined by five per cent.

TABLE XXXI
Land and Building Costs, High Rise Apartments Metropolitan Toronto,^a
1965 – 1970.

	Project Cost			Average Cost Per Suite \$	Average Suite Size (square ft.)
	Land	Building (\$ per square foot)	Total		
1965	1.52	11.35	12.87	13,800	1,073
1966	2.04	11.20	13.24	14,300	1,083
1967	2.11	10.81	12.92	14,600	1,113
1968	2.58	11.27	13.85	15,200	1,099
1969	2.85	11.19	14.04	15,000	1,076
1970	2.58	10.75	13.33	14,800	1,107

^aApartments in Toronto City, itself, are not included.

– Residential Rents

The national average increase in rents for both new and existing accommodation has been 20.4 per cent from 1961 to 1970. Practically all of the increase took place, however, between 1965 and 1970 and reflects the higher cost of acquisition and ownership of houses and new apartment buildings prevailing during this second five year period. Higher interest rates also caused owners of existing residential buildings to expect higher money returns on their investments and demand was sufficiently buoyant to permit it. Other factors pushing rents up included increases in municipal taxes, higher costs of maintenance, repairs, insurance, electricity, heating fuel, and the demand for more amenities.

A comparison between ownership costs for apartment buildings in North York in Metropolitan Toronto built in 1965 and for those built in 1970 indicates that ownership costs increased by 33 per cent over this period. Rent increases in Toronto have exceeded those of most other major metropolitan areas in Canada, rising by 23.3 per cent from 1965 to July, 1970. During that period rents increased by only 13.7 per cent in Montreal.

– Survey Findings

This analysis has confirmed that the cost of buying, financing and maintaining a home rose substantially during the last five years of the sixties. This was due primarily to large increases in the price of land, in wage rates, in interest charges, and because of larger overheads and profits particularly during the period 1966 to 1968. These same factors have contributed in large degree to rent increases during the period under review.

Although there appeared to be a levelling off in housing prices in 1970 due primarily to buyer resistance, there were no indications that the rate of increase in some cost factors including wage rates, materials and municipal costs were declining.

Cost of Land

The price of land for housing financed under NHA increased on average by 35 per cent between 1965 and 1969 and this development contributed appreciably to the rise in housing costs. This percentage is based on the price of land actually used for housing and does not take into account differences in average size of lot over the period or other items such as the quality of municipal services. In 1970 land represented on average about 20 per cent of the cost of house acquisition. This compared, as will be seen in Table XXXII, with an average figure for five metropolitan centers in 1965 of 17.3 per cent. The increases over the intervening years in these centers were most pronounced in Vancouver and Halifax. In Winnipeg there was little change while in Montreal and Ottawa land cost as a percentage of total acquisition was actually less in 1969 than in 1965. Land values generally were determined by the demand for housing, the supply of municipal services, the level of municipal taxes and the cost of interim financing.

TABLE XXXII
Land Cost for New Bungalows as a Percentage of Acquisition Cost in Selected Metropolitan Centers, 1965 to 1969.^a

Metropolitan Center	Land Cost as Percentage of Total Acquisition Cost				
	1965 %	1966 %	1967 %	1968 %	1969 %
Vancouver	19.2	19.3	19.4	20.7	23.5
Winnipeg	18.9	16.9	16.7	18.8	18.7
Ottawa	18.7	16.4	17.7	17.3	17.6
Montreal	14.4	14.2	12.0	12.7	11.4
Halifax	12.3	12.0	11.0	11.1	13.5
Average Five Centers	17.3	18.1	18.3	18.8	19.2

^aThe price of land component in the acquisition price of these bungalows financed under NHA included servicing provided by the developer or builder. In Toronto land was completely serviced by the builder. In some of the other centers the services were installed by the municipalities which then recovered the costs from the eventual buyers as local improvement taxes
Source: *Canadian Housing Statistics 1969*, Central Mortgage and Housing Corporation, Ottawa.

The availability of serviced land is dependent on its access to trunk sewers and water mains. Many municipalities, under severe financial limitations, have tended to provide extensions of services relative to the demand for building lots, thus creating a monopoly situation for those land owners who have access to these scarce services. This plus land speculation in many areas have pushed up land values. The development of planned public or private land assembly programs in an increasing number of urban centers has helped to offset highly inflated increases inherent in some *ad hoc* private ventures.

The cost of serviced land is also affected by municipal requirements regarding street widths, pavement, street lighting, curbs and sidewalks, storm sewers, underground wiring and water and sanitary mains. Other factors increasing the cost

of land include the time and cost of getting proposed plans of subdivisions approved, zoning laws regulating land use and density of housing and the heavy cost of interim financing.

Cost of Labor

The increase in the cost of labor also contributed to the increased cost of home acquisition during this period. In the projects reviewed in this study, the on-site labor content, increased in cost by 38 per cent between 1965 and 1969. Although wage rates vary greatly from trade to trade, the average percentage increases in rates of pay for various trades have been highly uniform over time. An unweighted average of wage contract settlements, including vacation pay but not other benefits, for eight leading construction occupations³⁵ in ten metropolitan regions³⁶ indicates that the average wage increase was six per cent in 1965, 8.4 in 1966, 9.9 in 1967, 11.2 in 1968 and 14.8 in 1969.

A review of collective agreements signed with the building trades in Ontario in the first quarter of 1970 showed, for example, annual wage settlements of 17.2 per cent for sheet metal workers in Sault Ste-Marie, 44.3 per cent for laborers in Kingston for a one-year agreement signed early that year and 57.2 per cent over three years for painters in St. Catharines. It was estimated that agreements with workers in Ontario in 1970 would average more than 20 per cent annually.

Though much residential construction is carried out by non-organized establishments the prevailing wage rate increases follow closely those of union agreements. Even after productivity improvements are taken into account it is apparent that increasing wage rates have been a highly significant factor in the upward pressure on housing costs. Moreover, wages continued to increase sharply in 1970 even though housing starts were down, prices were softening and builders' profits decreasing.

Cost of Materials

The increase in the prices of materials has been much less than for either land or labor, amounting to 15 per cent on average over the last five years. An acceleration in the rate of price increase for residential construction materials took place in 1969 when prices rose 5.3 per cent.

To a considerable extent these increases in the cost of construction materials reflect higher prices for lumber, copper, steel and other products which form the basic ingredients of construction. To some extent, regional differentials in the rate of increase of construction material prices result from differences in local distribution systems.

Profits

Overhead costs of house builders increased over the 1966 to 1969 period due primarily to the payment of improved fringe benefits to workers, higher operating

³⁵Laborer, carpenter, bricklayer, electrician, plumber, sheet metal worker, plasterer and painter.

³⁶Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Saskatoon, Calgary, Edmonton and Vancouver.

costs, increased selling costs and rising interest rates on interim financing. Some builders were paying as high as 18 per cent for interim financing in the first quarter of 1970.

The period 1966 to 1969 was characterized by a strong demand for housing, especially in such high-growth areas as Toronto, Vancouver and Ottawa. High profits to many land developers reflect this sellers' market.

Profits accruing to some house builders were good between 1966 and 1969 but the competitive nature of the industry, the predominance of small builders and the ease of entry have kept profits lower than those prevailing for developers of serviced land. In 1966 and 1967 house builders and land developers were able to pass on increased costs and speculative profits to house buyers. Since 1968, however, house builders' profits as a percentage of sales appear to have decreased.

Financing Charges

The increases in interest rates over recent years on mortgages are charted in Figure 40. The sharp rise in 1967 and 1968 in mortgage rates and in interim financing have added considerably to the cost of home acquisition and ownership. A rise of four percentage points in the interest rate between 1965 and 1970 has added approximately \$500 to the cost of interim financing on a house priced in the low twenty thousand dollar range. This increase in interest rates has also added \$50 to the monthly debt service charge of a \$20,000 mortgage based on a 25-year amortization period.

Combined with high interest rates the scarcity of mortgage money increased the average cost of houses being built, and the need for second mortgages at interest rates which were considerably higher than those for first mortgages.

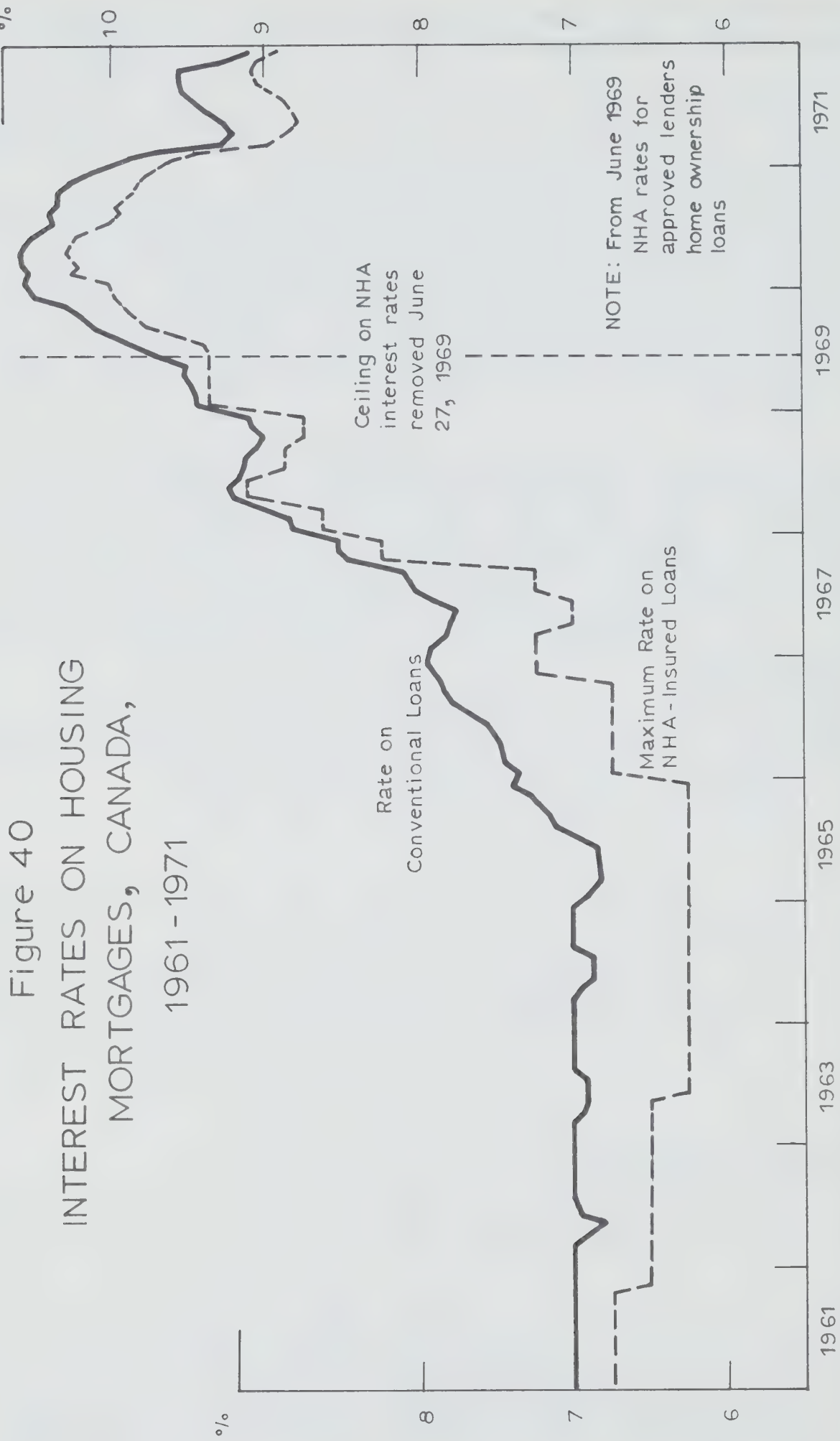
Municipal Taxes

Increases in municipal and local improvement taxes are among other factors which added considerably to the cost of owning a house. In 1969, on the average taxes increased the ownership costs for home owners by \$11 per month compared with 1965. Part of this increase was due to higher wage settlements for civic employees, part was due to the higher cost of raising finances and part resulted from higher cost of capital outlays such as schools, roads, sewers and water. Higher labor costs in the construction industry were also reflected in the increased capital costs.

Productivity and Technology

As already noted improvements in productivity and in building technology have served as two important offsetting factors to increased construction costs. In the period 1951 to 1969, productivity³⁷ in terms of output per person

³⁷Changes in output per unit of labor input cannot be attributed directly and solely to labor. These measures reflect not only changes in the skill and effort of the labor force, but also the contribution of the other productive resources with which it works, as well as the effectiveness with which all are combined and organized for production. Changes in technology, capital investment, capacity utilization, work-flow, managerial skills and labor-management relations each has a bearing on movements in the "productivity series" based on output per unit of labor input.



SOURCE: see Figure 39

employed increased, it has been estimated by about three per cent per year. From 1961 to 1969, for example, on-site output per employee in the construction industry appears to have increased by approximately 26 per cent. This rate of increase has not been sufficient, however, to offset increases in wage rates and other cost factors.

The improvements in building technology have been due to better quality and use of existing materials and to the introduction of new ones, as, for example, plastic pipe in the mechanical sector of the industry. More efficient construction equipment, particularly overhead cranes, and tools have been developed. Greater use is being made of prefabrication and component building. Total building systems are being introduced by some firms to take advantage of industrialization in the building process, particularly where builders can realize the economies of scale.

Cost has been increased by the lack of uniformity among municipalities in their building regulations. Building codes, fire codes, safety codes, health regulations, zoning bylaws and local improvements often lack uniformity and prevent the introduction of cost-saving practices.

Some progress is being made in the adoption of the uniform National Building Code but there have been many obstacles including the need to remove outdated legislation and regulations. The varying situation from municipality to municipality adds to costs, retards the rational development of the construction industry along more uniform and cost-saving lines and narrows the possibility for innovation in new materials, products, systems and techniques.³⁸

Rental Charges

The national average rate of increase of apartment rents since 1960 has been less than the apparent increase in the cost of living in a single-family house. A number of factors explain this development. Multiple-unit construction has experienced greater productivity gains than single-family houses. The high rate of increase in the price of serviced land has been less important in multiple-unit construction where land cost as a percentage of total cost is less. As a result buildings and developers have tended to concentrate increasingly on the construction of multi-unit buildings.

Strong inflationary trends in the cost of housing and home acquisition developed and persisted from 1965 to 1970 in every region of Canada, with the possible exception of Montreal. Inflationary forces were strongest in the high-growth areas of Toronto, Vancouver and Ottawa. For example, bungalows in Toronto increased by an average of 47 per cent.

Inflationary forces were also responsible for substantial increases in rents, which were approximately 20 percentage points higher in 1970 than in 1965 on a national basis. The increases were greatest in certain areas of high growth.

³⁸In 1970 when this review was undertaken, the authority for providing and administering building codes in Canada rested with each municipality, although some special sectors may be under provincial or federal jurisdiction. Since the desires and technical abilities of the different municipal administrations vary widely, so did building codes. Since then a number of provinces have proclaimed province wide building regulations based on the National Building Code.

— General Observations

The productivity performance of the construction industry during the period under review was not sufficient to offset the increases in prices of the different cost components of residential construction. One indication of this is that, although productivity improvement was at the rate of approximately three per cent per annum, each year wage rates paid to construction workers rose by more than seven per cent, material prices by more than three per cent and land prices by more than seven per cent.

Because the price of houses and related home ownership expenses rose more rapidly than personal incomes, a greater proportion of wages and salaries had to be paid out in 1970 for housing than was the case in 1965. In Winnipeg, for example, the minimum income requirement for a Central Mortgage and Housing Corporation loan, rose by 53 per cent between 1966 and 1970, whereas in that city wage and salary income per employee increased by 27 per cent and the consumer price index rose by 16 per cent during the same period.

In 1970 the increased cost of housing limited consumer demand and consumer resistance strengthened. Until then, however, pressures for new housing were sufficiently strong that builders and developers were able to pass on most cost increases to new home owners. In that sort of buoyant market, there was less pressure on those concerned with land development and building to resist cost increases to the maximum possible extent.

The acceleration in the relative cost of home ownership speeded up the trend to high-density, high-rise apartment construction, since it is possible to realize certain economies in the use of land, services, materials and labor in this type of construction which are not applicable to single-family dwellings.

Substantial increases in the price of land, and to a lesser degree in wage rates, building materials and interest rates all contributed to the higher cost of housing. In constructing a typical bungalow, labor cost increased by an average of 38 per cent in Canada between 1965 and 1969. In some cities the increase was much greater, for example, in both Montreal and Winnipeg it was 47 per cent. Because labor is an important cost component in residential construction, increments of this magnitude have had a serious impact on overall costs and prices.

Prices of serviced lots increased on average by 35 per cent but in Vancouver and Toronto the increases amounted to 60 and 65 per cent respectively during the same period. Profits relating to land development generally were substantial throughout the period under review, and although profits of house builders were relatively lower in 1970 compared with the 1966 and 1968 period, the levels of profit realized by both groups in the period under review were in part responsible for raising house prices to the levels reported.

Interest rates on NHA mortgages rose sharply between 1965 and the early part of 1970. They have since been reduced appreciably, although they are still well above the levels of 1965. The high cost of money has thus had an important bearing on the cost of home ownership.

The price of materials rose more moderately than most other cost factors between 1965 and 1969. But, because material costs are the major component of

total construction cost, even a 15 per cent increase in prices over five years inflates costs to a sizeable degree.

In summary, the major factors contributing to higher acquisition costs of homes are the rapid increases in land prices, in wage rates and in building materials. Land prices have risen sharply in many cities pushing up both initial outlays and long-term payments. High costs of money have contributed to increased initial payments and have had an even greater impact on costs of servicing mortgages. All of these factors contributed substantially to the steep rise in housing costs in a relatively short period of time and to placing the ownership of a home beyond the means of many who might otherwise have realized this objective.

Developments Since 1970

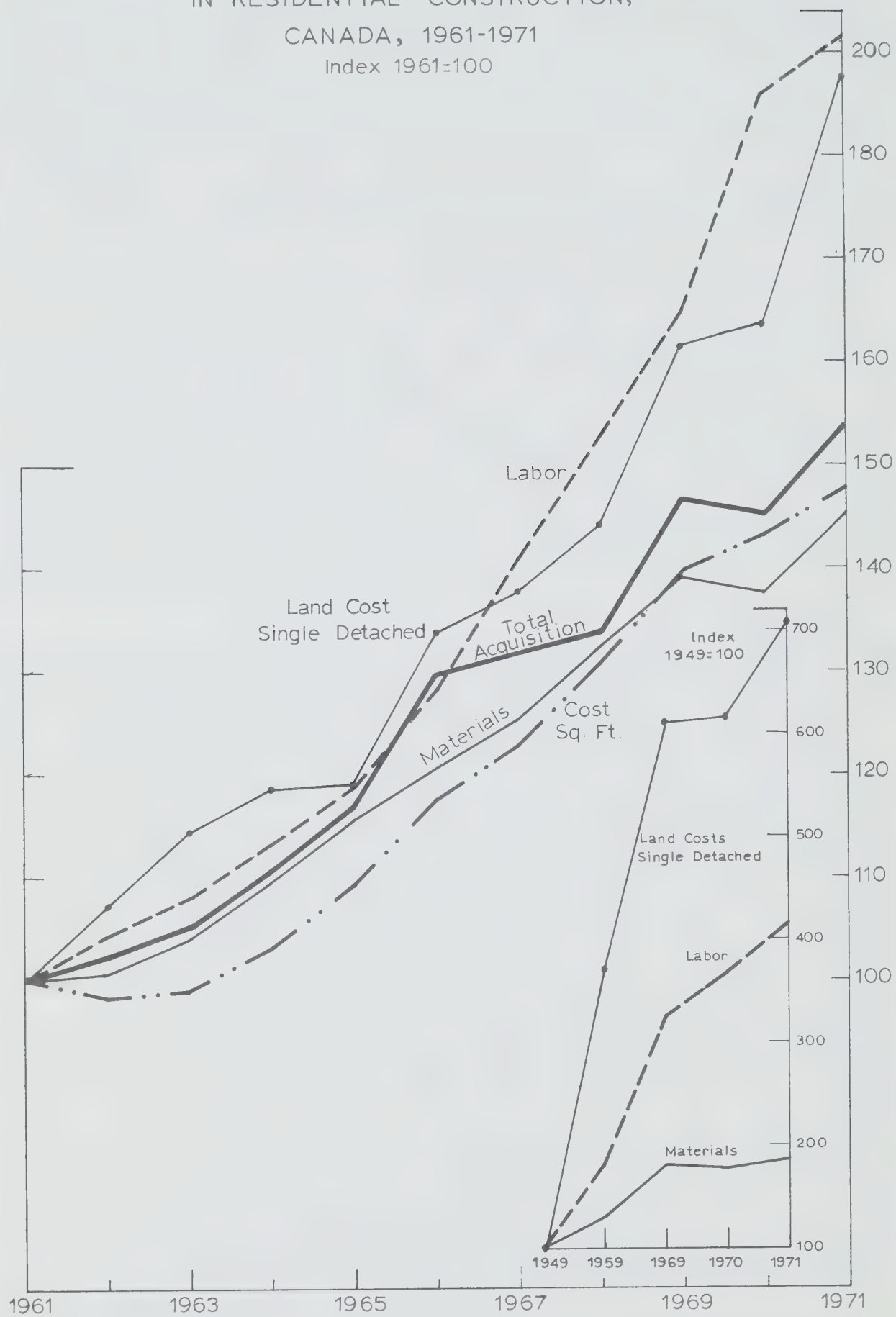
At the time the above analysis of prices and costs was undertaken in the latter part of 1970 several changing social and economic factors were being observed. These suggested that the steep rise taking place in acquisition and ownership costs might have been making the ownership of a home impossible for many more people. Among these factors the more important were the increasing price of available land, the rising cost of labor and building materials and continuing high profits. Increased financing costs also affected the acquisition price of houses during this period. They influenced even more sharply the cost of ownership through higher interest levels on first and second mortgages.

It was feared at that time that because of cost pressures, housing starts might drop substantially and that the shortage of homes would accentuate the underlying problem of increasing costs. Housing starts did in fact drop to 191,000 in 1970 but in 1971 housing starts reached a record of 234,000 units and this level was maintained in 1972. Meanwhile, as indicated in Figure 41, the price of land has continued to escalate. The reported average estimated cost of land for all single detached dwellings financed under National Housing Act in 1971 was some 15 per cent higher than in 1970.³⁹ At the same time the cost of construction was estimated to be 3.5 per cent higher, increasing the cost of acquisition by six per cent. During the same period, building materials cost rose 5.6 per cent, wage rates of construction workers increased by 13.2 per cent, while the Consumer Price Index moved up by 2.9 per cent. Preliminary information for the first nine months of 1972 appear to indicate a continuing upwards trend in the price of land, and in the cost of materials. The Consumer Price Index has also again been rising more sharply. Wage rates paid to construction workers, on the other hand, have been increasing less rapidly.

During 1972 the Government of Canada introduced several amendments to the National Housing Act which should have some positive effects on relieving the burden of ownership costs. The revisions in the Act contain new and important measures dealing with neighborhood improvement, residential rehabilitation, home ownership assistance for low income families, land assembly, financing of senior

³⁹Cf. *Canadian Housing Statistics, 1971*, Central Mortgage and Housing Corporation, Ottawa.

Figure 41
 ANNUAL INDEXES OF MAJOR COST COMPONENTS
 IN RESIDENTIAL CONSTRUCTION,
 CANADA, 1961-1971
 Index 1961=100



SOURCE: see Figure 39

citizens and other special purpose housing by non-profit corporations, co-operative housing, housing research and community planning. The total amount of government assistance for these measures is estimated at \$457 million in a fully operational year.

The Federal Government has also passed "The Residential Mortgage Financing Act" to encourage and facilitate the investment of more private capital into residential mortgages. In addition the government has increased the ceiling for NHA approved mortgages to \$30,000 with the possibility of obtaining a mortgage to cover up to 95 per cent of the purchasing price of a house.

These various measures will undoubtedly assist many who would like to have owned homes, but were unable to do so in the past. The upward pressures on the cost of land, labor and materials, however, will continue to raise the price of housing in Canada for some time to come unless other more far reaching measures are taken.

Prices and Costs in Non-Residential Construction

The lack of price stability in construction in Canada has clearly had a pervasive long-term impact on the economy as well as creating shorter-term regional dislocation problems. The particularly large increases in construction prices and costs during the post 1965 period, it has been seen, has had a marked impact on housing prices. Equally they have affected non-residential construction prices⁴⁰.

The difficulties of analysis present in the residential construction are greatly compounded in non-residential sector of the industry. This is due to the wider variety in its product range, the highly specialized nature of many of its firms and the consequent questionable quality and sparse coverage of the statistical data covering many operational aspects. As already noted some progress is being made in developing acceptable price deflators for different types of construction activity and reasonably accurate productivity measurements. There continues to be, however, serious gaps in basic information and these in turn make impossible a break down of aggregate analyses into several essentially autonomous subsectors delineated by type of construction activity and geographic area. Published construction series would be more useful if they reflected this market structure.

These gaps and inconsistencies in data limit analyses into causes and consequences of inflation in the industry and add to the difficulty of formulating policies to combat the serious inflation in construction and costs and prices. The absence of basic data in the case of construction is all the more disturbing since this industry, due to the complexity of its structure and its unique characteristics is not readily amendable to standard economic analysis. In spite, however, of the importance of the industry in the economy; the many anomalies it contains⁴¹ the fact that the prices of construction products and services directly affect the cost of living, the

⁴⁰This discussion of prices and costs of non-residential construction is a summary of a study undertaken in 1971 by E. Thomas Houston of the Price Review Division, of the Prices and Incomes Commission.

⁴¹The large wage rate increases in 1969 and 1970 realized by most construction trades in Canada, even though there was a general slackness in demand for construction services at this time is one such anomaly.

cost of investment and the cost of government; and that effective public policy formulation requires a clear understanding of the process by which prices in this sector are determined: the economics of the industry have not been subject to extensive research in Canada or in most other countries.⁴²

— Long-Term Trends

The long-term changes that have taken place in Canada in the price indexes of the materials and labor components of residential and non-residential construction are presented in Table XXXIII. The price indexes of building materials used in residential and non-residential construction are given both before and after 1961. In each case the increases were clearly more rapid than those of the construction wage rate index up to 1956. Since then the wage rate index has more than doubled while the building materials indexes had increased in 1969 by 39 per cent, and 29 per cent in residential and non-residential construction respectively. Composite indexes with appropriate weighting worked out for each broad construction category are also included in Table XXXIII.

A major complication in developing reasonably reliable indicators of price changes in construction is the presence of several points in the chain of activities at which pricing is actually done. An attempt is made in Figure 42 to present schematically the flows of goods and services into construction and to indicate the four points in these flows at which pricing can take place.

Another basic difficulty already noted in compiling accurate statistical series in the construction industry is the heterogeneity of its output and thus the absence of a common unit of measurement. The usual statistical procedure in such instances is to measure output and price indirectly through movements in the prices of factor inputs accompanied by assumptions about the nature of the relevant production functions. Construction price indexes in Canada have been based traditionally on using fixed input weights. The construction price indexes currently now available or being developed are given in Table XXXIV. It is obvious from this table that there remain many types and sub-types of construction to be covered. It will also be noted from the last column of this table that aside from that for highways, there are no other price indexes in Canada which are based at the end-product points A or B.⁴³

⁴²For earlier overviews of the economic characteristics of the construction industry, see: *The Canadian Construction Industry*, the Royal Bank of Canada, Queen's Printer, Ottawa, 1956; *Construction Labour Relations*, ed. H. C. Goldenberg and J. H. Crispo, Canadian Construction Association, 1968; and *Economics of the Construction Industry*, P. J. Cossimatis National Industrial Conference Board, New York, 1969.

⁴³The utilization of secondary data sources in price estimation of Canadian construction output is similar to the approaches followed in the United States and Britain in this area. The major obstacle here is the difficulty to reflect accurately changes in material-labor and labor-capital utilization ratios, or changes in overhead and profitability. It is generally thought that such deficiencies lead to an upward bias in price indexes over longer periods of time: the assumption being that over time net gains occur in factor productivity and that since competitive markets exist in construction at least some of the benefits are passed on to the purchaser in the form of lower prices. In addition, the absence of a profit variable renders input index substitutes insensitive to price responses which occur as a result of changes in demand for construction goods and services, and to changes in the supply capacity of the industry.

TABLE XXXIII
Annual Indexes of Prices of Building Materials and Construction Wage Rates,
Canada, 1935-1971
(1961 = 100)^a

Year	Price Indexes Building Materials			Composite Indexes	
	Residential (a)	Non- residential (b)	Construction wage rate index (c)	Resi- dential ^b (a)+(c) (d)	Non- Residential ^c (b)+(c) (e)
1935	32	44	26	29	36
1936	33	44	26	30	36
1937	36	48	26	32	38
1938	35	47	27	31	38
1939	35	46	27	31	38
1940	38	47	29	33	39
1941	42	50	30	36	42
1942	45	53	32	39	44
1943	48	54	35	42	45
1944	50	54	36	43	46
1945	51	54	36	44	46
1946	53	57	39	46	49
1947	62	64	42	52	54
1948	74	73	48	62	62
1949	78	76	50	65	65
1950	83	80	53	69	68
1951	98	90	60	86	77
1952	97	94	63	81	80
1953	97	95	67	82	82
1954	95	93	70	83	83
1955	97	94	72	85	84
1956	100	98	75	88	88
1957	100	99	80	90	91
1958	99	99	86	93	93
1959	101	100	91	96	96
1960	101	101	97	99	99
1961	100	100	100	100	100
1962	101	101	104	103	102
1963	104	103	108	106	105
1964	111	106	113	112	110
1965	116	112	119	117	115
1966	120	115	128	124	121
1967	124	118	141	132	128
1968	132	121	153	142	135
1969	139	126	164	151	143
1970	138	130	186	162	156
1971	145	147	210	177	168

^aThese series have been arithmetically converted from the base year 1949.

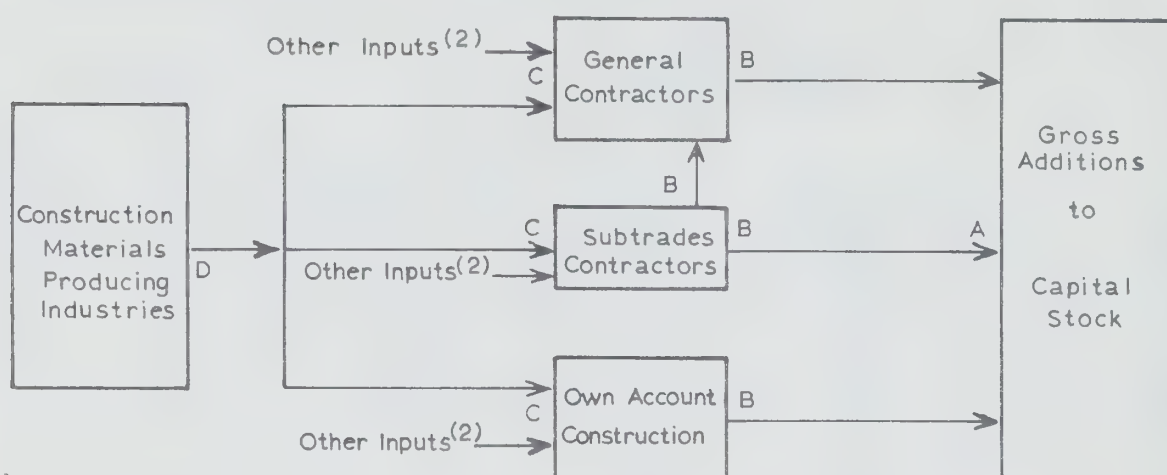
^bWeights used to combine materials and labor components (a)62.5:(c)37.5.

^cWeights used to combine materials and labor components (b)65.0:(c)35.0

Source: Statistics Canada and *Wages Rates and Hours of Labour*, Canada Department of Labour.

Figure 42

POSSIBLE PRICING POINTS⁽¹⁾ IN SELECTED FLOWS OF GOODS AND SERVICES
INTO GROSS ADDITIONS OF CONSTRUCTION CAPITAL



(1) Pricing Points:

A = Purchasers' prices of in-place or final product goods

B = Contractors' selling prices

C = Purchasers' prices of inputs into construction fabrication

D = Manufacturers' selling prices

(2) Principally labor and production equipment used

TABLE XXXIV

Construction Price Indexes Currently Available (A) or Under Development (D)^a in Canada

Type of construction	Sub-type	Status	Type of Pricing	Pricing Points ^b
Non-residential building:				
Complete buildings	Schools, offices (possibly other types to be selected)	D	Model	A
Materials		A	Input prices	D
Costs		A	Input prices	D,C
Engineering	Highways	A	Prices "in-place"	A,B
	Electric utility	A	Input prices	D,C
	Electric utility	D	Unit installation costs (Pilot survey)	A
Sub-trades (inputs into non-residential construction).	Fabricated steel in-place Pre-cast concrete in-place	D	Model	B
Residential building:				
Materials		A	Input prices	D
Costs		A	Input prices	D,C

^aOnly development projects relating to non-residential building and engineering construction are listed.

^bSee Figure 42.

Source: Statistics Canada.

The Canadian price indexes for both new residential and non-residential construction have been revised recently to include somewhat arbitrary profit and productivity variables in an attempt to decrease any distortions from the fixed-input approach. With the introduction of these variables the revised indexes do not increase to the same extent as the unrevised indexes based on fixed inputs. The differences in the two price indexes series are represented in Figure 43 for non-residential construction and in Figure 44 for residential construction.

Unlike the other price indexes, the one for highways as already mentioned, is not based on a fixed input concept but on accepted bid prices per road unit. The construction of roads and highways is more homogeneous than most other principal areas of construction activity and has experienced fewer major quality changes. In addition, large quantities of well documented construction price and cost data by geographical area exist and are accessible. These characteristics are not common to the other sectors of construction where Statistics Canada has been able only to base price indexes on end-product prices. A comparison of a price index for highways based on construction goods in place with that based on a simulated input index is made in Figure 45. The index based on contractors bid prices not only is less steep and much more cyclical than that based on fixed inputs but also clearly suggests that other construction price indexes may contain serious distortions.

Statistics Canada has recently undertaken a research program to develop more accurate measurements of price movements for broad categories of construction output. This program, directed at developing data sources closer to the appropriate pricing points, includes an attempt to build construction prototypes which are representative of prevailing types of construction in different metropolitan areas and in which changes in quality in response to changing market demand are readily identifiable. These construction prototypes are then injected into the bidding stream over successive time periods thereby eliminating some of the problems associated with the lack of continuity over time and the lack of comparability in observable market prices. The model pricing method not only measures movements over time in end-product prices but it also provides important information on developments in overhead and profit margins, productivity gains and material and labor costs for different types of construction activity in different metropolitan areas.

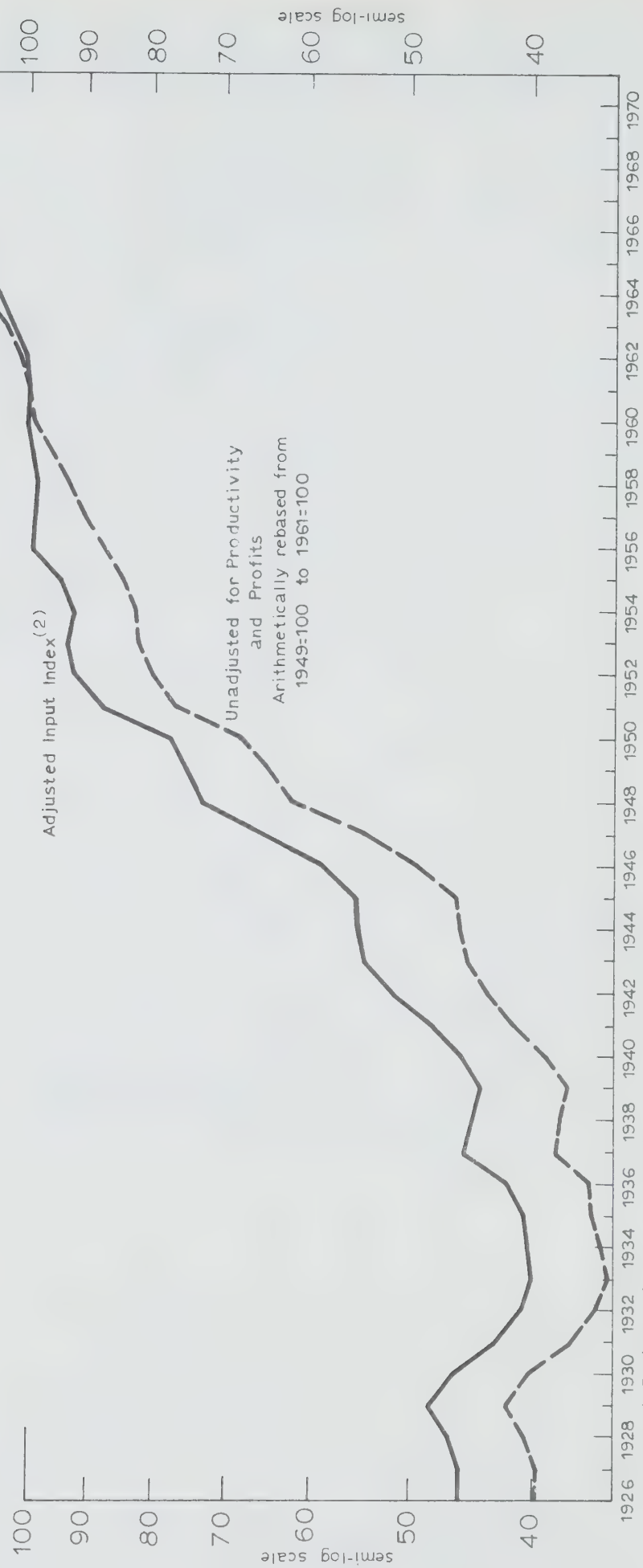
— Comparative Cost Profiles

This analysis of price indexes and of model pricing was undertaken as a background to the compilation of data on the relative importance of the principal cost components in selected types of non-residential building activity. The changes in these component costs and in end-product prices were also determined over the 1965-1970 inflationary period. For this purpose comparative cost profiles for this period were constructed for an elementary school located in Toronto, a medium size hospital in Vancouver and a commercial high rise office building in Montreal, Toronto and Vancouver.

Ideally such cost profiles should be based on the most representative building type in a particular category which was built throughout the period of interest. It is not possible, however, to locate or even to define a so-called typical school, hospital

Figure 43

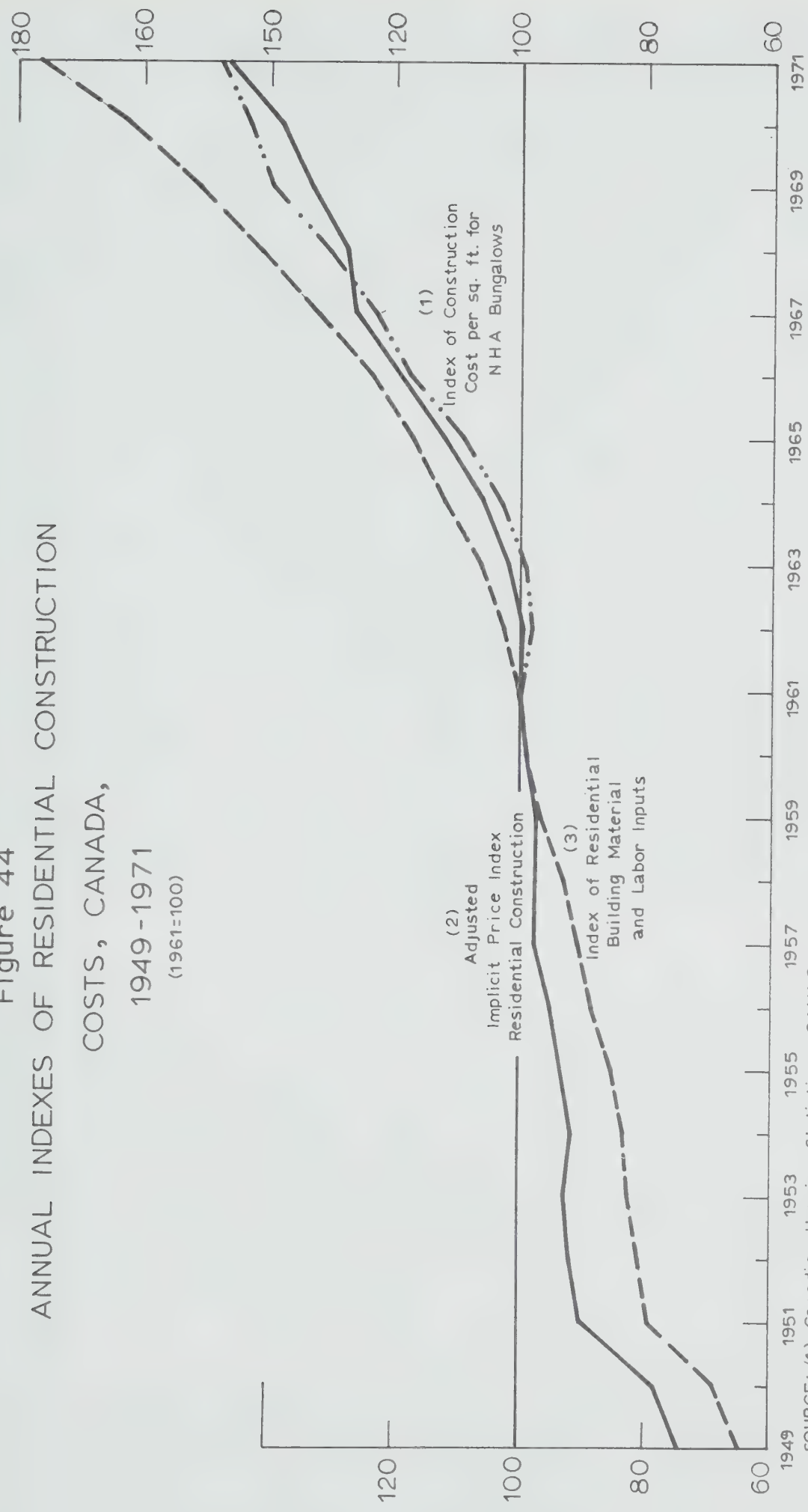
IMPLICIT ANNUAL PRICE INDEXES, NON-RESIDENTIAL
CONSTRUCTION,⁽¹⁾ CANADA,
1926-1971
(1961=100)



1. Business Gross Fixed Capital Formation
2. Adjusted for Profits and Productivity from 1950 on

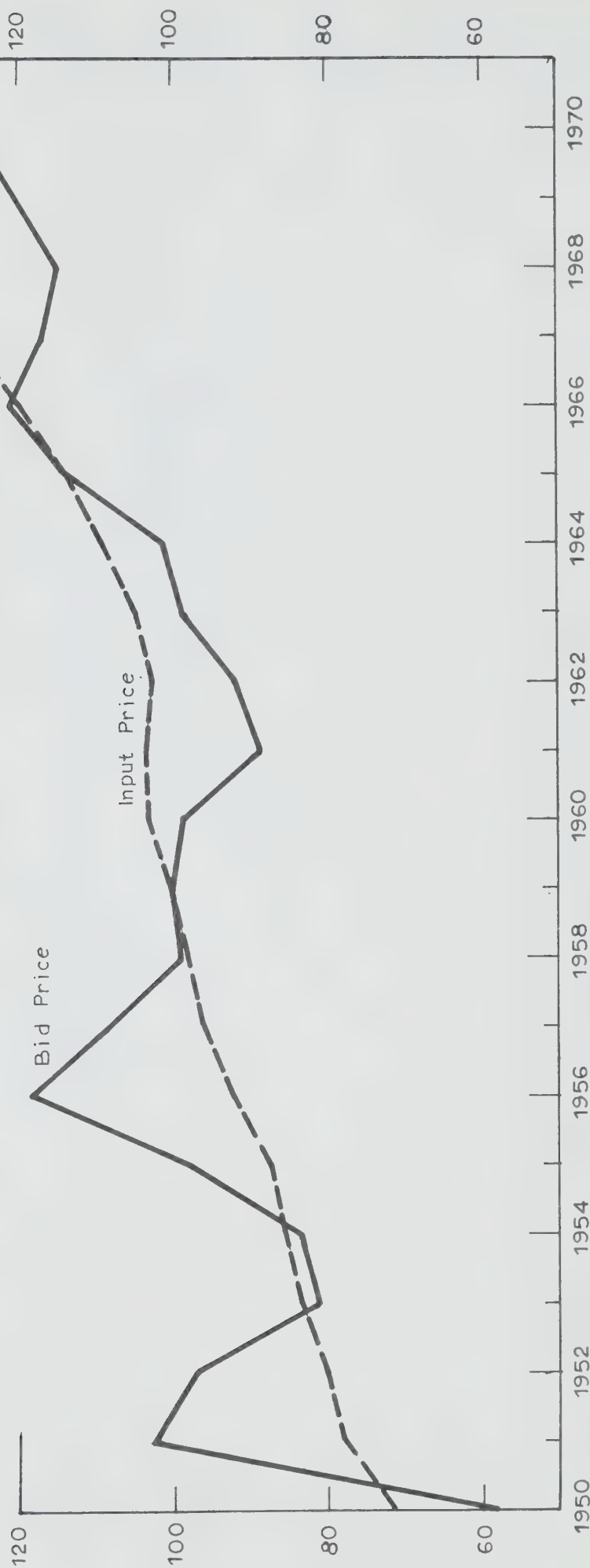
SOURCE: National Accounts, Statistics Canada

Figure 44
 ANNUAL INDEXES OF RESIDENTIAL CONSTRUCTION
 COSTS, CANADA,
 1949-1971
 (1961=100)



SOURCE: (1) Canadian Housing Statistics, CMHC
 (2) National Income and Expenditure, Statistics Canada
 (3) Prices Division, Statistics Canada

Figure 45
ANNUAL PRICE INDEXES, HIGHWAY CONSTRUCTION,
1950-1971
(1959=100)



SOURCE: special tabulation, Statistics Canada

or commercial high rise that is most representative for any particular regional market much less nationwide and over a five-year time period. Consequently actual buildings located in different metropolitan areas were used as the framework for the cost profiles when their physical characteristics were generally in common with similar structures erected in 1965 and again in 1970. An attempt was then made to price these buildings assuming that they were built in 1965 and again in 1970.

The primary emphasis in developing the comparative cost profiles was placed on the accuracy of end-product prices and per unit costs broken down into their material, labor, overhead and profit components. In addition, an attempt was made to measure quantitatively any marked modification in user requirements or quality changes due to improvements in specifications or materials over the period. Data were not singled out on changing land values or financing charges. As in the case of the housing data referred to above both of these factors, it was recognized, contributed significantly to the overall costs of the buildings concerned. Financing charges tend to show up mainly in overhead and profit costs but they are present in other cost items as well. Land values, on the other hand, tend to have a less direct impact on construction costs *per se*.

The major problem faced in this review was the dearth of information concerning the actual cost breakdown of construction projects. Construction companies tend to be notorious for their cost accounting methods or lack thereof, and the cost records of construction users are usually not any more complete. In recognition of this problem, one determinant in the choice of actual building for the cost profiles was the availability of detailed cost information from general contractors and sub-contractors. In the construction of the different comparative cost models information from various federal and provincial government departments and crown corporations, from industry associations and individual contractors, and from firms of municipal engineers and quantity surveyors was also incorporated.

School

A summary of the cost profiles of an elementary school in Toronto, in 1965 and in 1970 are set forth in Table XXXV. From this it will be seen that substantial increases during this inflationary period occurred in all of the cost components included in the table. The same school built in 1965 for \$470,000 would in fact have cost \$600,000 or \$130,000 more in 1970. The rise, in both absolute and percentage terms, was highest in labor resulting in an increase in this item as percentage of total cost from 32 in 1965 to 35 in 1970. Profits, although declining from six per cent of all costs in 1965 to five per cent in 1970, rose in absolute terms by 15 per cent over the five-year period.

Hospital

Similar cost profiles of a medium size hospital in Vancouver in each of the same two years are presented in Table XXXVI. Here again all cost components increased over the half decade in both absolute and percentage terms. Labor costs also showed the largest increases but in both years they formed a lower proportion of total costs than was the case in constructing the school in Toronto. Profits in this

TABLE XXXV
Cost Profiles of an Elementary School, Toronto^a 1965 and 1970.

Cost Component	1965		1970		
	Actual ^b \$	Percentage of Total Cost %	Estimated \$	Percentage of Total Cost %	Percentage Increase 1965 to 1970 %
Labor	148,000	32	207,000	35	40
Materials ^c	260,000	55	315,000	53	21
Overhead	35,000	7	44,000	7	27
Profit ^d	28,000	6	32,000	5	15
Total	471,000	100	598,000	100	27

^aThe school chosen was located in North York. It should be noted that schools in the Toronto area tend to be expensive relative to the rest of Ontario and other areas of Canada. Ontario school boards, moreover were not subject to as much pressure during the 1968-1970 period from the Ontario Department of Education to lower the rate of increase in building costs as were school boards in other provinces. Later, during 1971 and 1972 more restrictions were introduced in Ontario.

^bThese costs are those specified in the actual contract carried out in 1965.

^cThe materials cost in 1965 is low because of an unrealistically low bid by the electrical sub-contractor resulting in a somewhat high percentage increase for materials over the five-year period.

^dIncludes general contractor's head office overhead and interim financing charges.

TABLE XXXVI
Cost Profiles of a Medium Size Hospital, Vancouver^a 1965 and 1970.

Cost Component	1965		1970		
	Actual ^b \$	Percentage of Total Cost %	Estimated \$	Percentage of Total Cost %	Percentage Increase 1965 to 1970 %
Labor	598,000	20	897,000	25	50
Materials	1,707,000	59	1,987,000	55	16
Overhead	255,000	9	312,000	9	22
Profit ^c	359,000	12	413,000	11	15
Total	2,848,000	100	3,610,000	100	23

^aThis hospital containing one hundred and twenty beds was located in Richmond.

^bActual contract costs, as in previous table.

^cIncludes general contractors' and sub-contractors' head office overhead and interim financing charges.

case, too, were 15 per cent larger in 1970 than in 1965 even with higher increases in the other cost components. In all, the cost of the hospital which totalled \$2,850,000 in 1965 would have risen to \$3,600,000 or \$750,000 more, exclusive of land, had it been built in the same locality in 1970.

Office Building

Finally in Table XXXVII a comparison is presented of the costs of a commercial high rise office building in Montreal, Toronto, and Vancouver again in 1965 and in 1970. As in the case of the school in Toronto and of the hospital in Vancouver large increases in total construction costs in building high rise commercial office structures in these two cities and in Montreal over the five years from 1965 to 1970. Again labor costs increased most in all cities although the rise was significantly less in Toronto due in part to the greater introduction of important design and technological changes during the period in that compared with the other centers. A decline in profits occurred in Vancouver due in part to a prolonged shutdown connected with negotiations of renewed collective agreements in that year.

TABLE XXXVII
Cost Profiles of a Commercial High Rise Office Building
in Montreal, Toronto and Vancouver, 1965 and 1970.

Cost Component	Montreal	Toronto	Vancouver			
Total Cost						
Actual 1965 \$	6,870,000	7,700,000	7,500,000			
Estimated 1970 \$	8,830,000	9,090,000 ^a	9,220,000			
Increase 1965-1970 \$	1,960,000	1,390,000	1,770,000			
Increase %	29	19	24			
Component Cost						
Increase 1965-1970						
Labor %	54	36	49			
Materials %	21	12	18			
Overhead %	32	19	27			
Profit ^b %	15	11	-16			
	<u>1965</u>	<u>1970</u>	<u>1965</u>	<u>1970</u>	<u>1965</u>	<u>1970</u>
Component as Percentage of Total Cost						
Labor	22	26	23	27	22	27
Materials ^c	72	68	67	64	69	65
Overhead ^d	4	4	6	6	5	5
Profit ^d	2	1.7	3.5	3.3	4.3	2.9

^aIn the Toronto cost profile, the relatively low increase in end-product price is in part explained by the inclusion of design and technological changes. This suggests that design and technological changes are significant costs over time and that the traditional cost-profile approach tends to overestimate cost increases when it does not allow for these factors.

^bThe percentage increase in costs over a particular time period is very much influenced by the economic climate existing during the beginning and terminating years. The year 1965 for example, was considered nationally to have been a good construction year as the construction boom was just under way and profits were high, but Montreal was experiencing some slackness in demand in the first two quarters of the year relative to Toronto and Vancouver. On the other hand, 1970 was considered to be a bad year nationally, but in Vancouver it was considered a disaster with the six-month shutdown in the industry. The percentage increase in total costs from the first quarter of 1965 to the first quarter of 1970 would have been greater in all three cities if the economic climate of the terminating years had been reversed; and Montreal would have shown less of an increase in total costs in comparison with Vancouver, if the former had started the period with a relatively good year and terminated with a relatively poor year.

^cIncludes sub-contractors' equipment, overhead and profit.
^dGeneral contractors only.

Main Survey Findings

It should be noted that in interpreting the results of these non-residential building analyses that there are obvious inconsistencies between the different cost profiles with respect to how costs are allocated between direct costs and overhead. Added complications were the reluctance of construction firms to provide per unit profits and the wide range of profit margins used by different contractors. Nevertheless percentage increases in end product prices and costs for the period are broadly in line with information available from government and industry sources. The increases in end product prices from 1965 to 1970 range from 23 per cent for a hospital in Vancouver to 29 per cent for a high rise office building in Montreal. The economic climates during the beginning and terminating years greatly influence the percentage increase in any temporal analysis. The combination of a high demand climate in 1965 and a relatively sluggish one in 1970 tended to minimize the percentage increase in end product prices over the period. The percentage increase in profits is influenced even more as profits tend to move up quickly during an upturn in building activity and drop quickly when demand turns down. In point, profits in the cost profiles increased over the five years by not more than 15 per cent and in one instance declined.

Generally, the significance of labor cost in total construction costs increased in all three non-residential cost profiles over the period 1965 to 1970 while the materials and profit components correspondingly decreased. Wage rates increased faster than material prices from 1965 to 1970 and profit margins in 1970 generally reflected the sluggish demand environment prevalent in most areas of building construction in contrast to the relatively high demand and high profit margins being experienced in 1965. Movements in the unit costs of labor and materials, however, reflect not only movements in wage rates and prices but also productivity gains. Given a relatively high rate of increase in labor costs there is an incentive for buildings to be designed to minimize labor. An example of this is the use of prefabricated materials, thus substituting lower cost factory labor for higher cost on-site construction tradesmen. Building design has moved in this direction but this variable has not been incorporated in the cost-profiles. Also, one cannot be confident that all productivity gains accruing from an improvement in the quality of labor, better management of work flow, and improved material design over the period are reflected accurately.

Broad Conclusions

From this extended analysis of the impact of fluctuations in construction in Canada it has become abundantly evident that serious disturbances have continued to be felt not only by those within the industry but even more so by those outside. The rapid increases in construction costs and prices closely linked to increased and generally sustained demand pressures faced by the industry since the mid-sixties have been passed on to the clients served. These clients in turn have had the problem of covering these higher construction costs. In most cases this has been done by incorporating them into higher prices charged for goods produced or

services provided. These increased prices have added significantly to the inflationary pressures in the economy.

The higher prices and costs in the economy have been stimulated also, and often in a more direct fashion, by the pattern setting influence, or “rub-off” effect on other sectors, of higher property values, financial charges and wages and salaries associated with the excessive demand conditions in construction. The effects of these and related increases have varied from area to area across the country but aside from their frequently chaotic local influences their overall impact has usually been to buoy up and maintain expectations of more inflationary pressures still to come. This has been done, moreover, even in the face of the essentially new phenomenon of increasing unemployment taking place at the same time.

It is apparent also that the upward movement of construction prices and costs over the past decade not only has been generally maintained but also has been pronounced. This is in contrast to the tendency of both prices and costs to move more slowly in the reverse direction when market conditions in some areas of the country have become unfavorable. This downward cushioning effect has not been observable to the same extent in the case of profits.

The far reaching consequences of the largely unbridled fluctuations in construction operations observed in this chapter pose increasingly serious problems for the industry and the economy. This leads to an examination in chapter four of possible types of action to cope in a more deliberate manner with the difficult long standing problem of instability in construction activity.

chapter four

ACTION TO ACHIEVE GREATER STABILITY

There are no simple or easy steps that can be taken to achieve stability in construction operations in Canada or in most other countries. Were this not so the unevenness in the flow of work and its many resulting problems would have been reduced if not removed long ago. Why then should attention be focussed on fluctuations in building activity today when in spite of some periodic attempts to deal with them, their basic character and extent have been taken for granted over the decades as part of the normal course of events by contractors, architects, building tradesmen, clients and governments?

Several developments make a changed approach possible today. In the first place, the consequences of instability in construction stemming from sharp and sustained excess demand pressures in some areas and from equally serious reverse conditions in others, have produced many visibly disturbing effects on the economy over recent years. These effects have become more serious when as in the late sixties and early seventies cyclical excesses have ceased to be self-correcting and inflationary price and income rises have continued even in the presence of unemployment and slackness in several regional and industrial sectors of the economy. From the standpoint of governments, the more general problem is of course the presence of cyclical instability in the economy as a whole. Any measures they take to reduce fluctuations in their own construction programs and in the flow of all construction work must obviously be fitted into this broader context. To the extent, however, that reductions can be achieved in construction peaks and valleys,

this is likely to have a positive influence on stability elsewhere in the economy. The reverse is also true.¹

Secondly there are increasing numbers of contractors and union leaders who are recognizing that instability of work underlies many of their immediate industrial relations, cost and productivity problems and that until this basic issue is handled effectively there is little chance of tackling these other problems satisfactorily. Closely related to this is a growing realization on the part of those on both sides of the industry that many of the interests of each cannot be sharply separated from the other or from those of the wider community. Thus more employer and union leaders are becoming convinced that the best way to advance their interests and those of their respective groups is to take a more overall view.²

Still another important development is that governments, which, as is now generally accepted, must assume the major responsibility for the smooth functioning of the economy, are gaining more experience in designing and carrying out broad economic policies. As this is occurring all groups in the country are recognizing, although some still reluctantly, that co-ordinated advance planning when carried out in an orderly and open fashion, and with ample opportunity for democratic participation by those most directly involved, can advance rather than retard general economic and social welfare.

Were it possible to achieve stability in the economy generally the problems confronting the construction industry would obviously be greatly reduced, but even then the task of bringing about greater stability in construction operations remains a formidable one. This arises partly from the highly complex, varied and widely dispersed nature of the operations themselves. It springs also from the large number of individuals, trades, professions, and other groups directly involved in construction; from the even greater number and variety of persons and groups demanding their services and, not least, from traditional attitudes towards established industrial practices and roles adopted by employers, workers and public bodies. These attitudes alter slowly even in a time of rapidly changing technology.

There is, though, today a growing recognition in Canada that instability in construction no longer need be regarded as inevitable. It is thus both timely and important to explore the types of measures that appear to offer the best chance of bringing about a more even flow of construction operations. Among these, two are singled out for special attention. The first is the need for fuller and co-ordinated information on planned future construction. The second is the possibility of developing a broad employment security program. These will be discussed in turn. Consideration will be given later to complementary or supplementary steps that might be taken.

¹For a time in the middle sixties many economists thought steady growth in the economy would bring with it full employment and that structural and supply problems should be the main focus of attention. As a result there was a tendency to pay inadequate attention to indicators of current and longer-run instability, notably the excessive demand pressures that were then building up in the economy and which in turn led to new cyclical disturbances. Cf. *Inflation, Unemployment and Incomes Policy, Final Report*, Prices and Incomes Commission, Ottawa pp. 11-19.

²A concrete example of this broader approach is to be seen in the far reaching proposals developed by the Joint National Policy Committee of the Mechanical Contracting Industry in 1970. See Appendix C.

Planned Future Construction

As already pointed out detailed information is now regularly assembled mainly through public agencies on the principal types of current construction in Canada. This is either channelled to, or collected in the first place by, Statistics Canada where it is consolidated, analyzed and issued in monthly and annual publications.³ Some information on anticipated expenditures over the coming year is also assembled as part of annual and semi-annual Investments Intention Surveys conducted by Statistics Canada, the Department of Industry, Trade and Commerce and the Economic Council of Canada. These surveys represent an important beginning in acquiring, analysing and making available in a systematic manner key data on construction projects that are presently underway. The surveys need to be broadened and extended to cover a longer future time span.

Specific proposals for closing gaps in existing surveys and for evolving reliable projections of major types of future construction by principal areas of the country were developed by an Interdepartmental Working Party in the Government of Canada convened in 1971. These proposals set forth in a paper prepared in the spring of that year are included in Appendix E below.

Briefly, it is suggested that pertinent data on all major private and public construction projects be assembled quarterly by Statistics Canada covering those currently underway and those not commenced but on which firm decisions to proceed have been taken. All clients, particularly those who contemplate major construction undertakings, should be urged to advance their planning so that as firm information as possible would be available on these projects from 18 to 24 months before expected starting dates. Many government and private bodies are now forecasting expenditures up to five years or more in advance so that more reasonably firm decisions can be expected today about construction projects to be commenced 18 to 24 months from now than were made a few years ago. Where desired information about future projects could be submitted on a confidential basis, until the construction plans were made public. The information assembled could then be analyzed by broad types of construction and for each of some 25 of 30 principal construction market areas across the country.

This stream of data covering major projects currently underway and those definitely planned to commence within two years, could be supplemented by projections of all other construction likely to be undertaken over the next 18 to 24 months, again for broad types of construction and for each principal area. These projections could be based on a continuing analysis of the detailed information now supplied on current construction operations.

The results of the analyses of the larger projects and the projections of others could then be combined in a form which would preserve the anonymity of individual operations, where this was desired. As soon as the survey and projection techniques were developed and proven, data on the expected levels of construction activity might be issued on a regular quarterly basis. The availability of these figures while of general interest would prove particularly useful in alerting clients and governments to the probable patterns of construction over the coming year and one

³See Appendix E.

half to two years. The consolidated information on expected operations would permit them to consider whether any changes should be made in their planned construction programs. Private firms which determine their capital investment plans on the basis of internal firm or industry market outlooks might be unlikely to alter their project plans without substantial incentives or some form of broadly acceptable control or permit mechanism. Public bodies, on the other hand, usually sensitive to the impact of their investment decisions on business activity and on employment might be more likely to adjust their future construction programs in the light of what appeared best for all concerned. Although there would continue to be resistances to adjustments of construction programs, especially in the light of political considerations, governments would no doubt be more influenced in this respect by discussions with contractors, unions and other interested bodies armed with data on expected future construction than they would be otherwise. The types of adjustments made would obviously vary from time to time. In some cases they might involve advancing the starting dates of projects in areas where it had become clear construction was expected to be slack over the period in question. In other areas where excessive demand conditions were contemplated, it could mean delaying projects.

There would undoubtedly be objections from some quarters to such an orderly attempt to collect and disperse essential information on future construction. Such objections could be expected to dwindle and disappear when it becomes clear as it likely would, that the overall benefits to the construction industry and to the economy made the effort well worthwhile. Obviously to achieve maximum results the full co-operation of all public and private clients of the construction industry in all parts of Canada would be required. This would involve supplying advance information and responding appropriately in the light of the total anticipated program of building as knowledge of this became available, and where such action did not work a serious hardship on those directly concerned. To facilitate such adjustments and to ensure that they were made in a co-ordinated fashion it would likely become necessary to establish a central construction clearing office in Ottawa for Canada as a whole and perhaps also one in each province or region. This office which might concentrate on those functions outside of data collection and analysis would need to operate separately from Statistics Canada. Obviously though it would have to maintain a close association with those directly involved in collecting, analysing and issuing the basic statistical data on current and future construction. The office could be set up initially by the government but it might be preferable, in order to ensure the fullest possible measure of co-operation from both private and public establishments, for it to operate as an independent body answerable only to Parliament and to the Canadian public as a whole. As a further means of encouraging participation and support from all groups involved its board of directors might be composed of persons named by contractors, unions, clients and governments with representation also from professional associations and the public. An independent person might serve as chairman of the board.

During recent years clients of the construction industry have become acutely aware of rising costs on capital projects. In some cases they have realized that their own demands on the construction industry have contributed to these rising costs.

These demands have included a failure on occasions to appreciate the consequences of poor timing either in starting or completing major projects. They have involved frequently too an insistence by the clients on finishing by specified dates regardless of additional overtime and other costs that may have to be incurred by them. Such experiences, which may contribute to final project prices much higher than those originally planned, have been an important element leading to the formation of both formal and informal client associations. One of these is the Owner-Client Council of Ontario established formally in 1970 as an advisory body to the Ontario Federation of Construction Associations. Similar steps are being taken in other parts of Canada to review critically client practices and to consider action that can be taken individually and collectively to check rising construction costs. There has also been a growing tendency stimulated largely by rapidly mounting construction costs for more firms to undertake major renovation and repair jobs with their own employees rather than to contract the work to regular construction companies. Such owner executed construction projects may well involve some employees not normally engaged in building operations. In 1971 for example extensive renovations at the steel plant in Sydney, Nova Scotia, were undertaken by regular personnel many of whom were steel makers and members of the local Union of United Steel Workers. The firm avoided some of the accelerating construction costs and the regular workers remained on payroll rather than running the risk of becoming unemployed during the period the plant changeover was in progress.

Governments, too, have indicated an increasing interest and concern about construction costs and the factors giving rise to them. The current study of cyclical instability in construction, begun in 1972 by the Economic Council of Canada at the request of the Federal Government, is one indication of this increased interest.⁴ Another was the positive response by the federal and provincial Ministers of Finance to a proposal made by the Prices and Incomes Commission at a joint meeting in Ottawa in December 1970, that the question of assembling fuller information on current and future construction projects be examined in depth by a working committee. Subsequently after an Interdepartmental working party had been convened, a progress report was submitted in April 1971 to the Continuing Committee of Officials on Fiscal and Economic Matters. This report, substantially as presented in Appendix E below, was favorably received by both the federal and provincial representatives on this Committee. There was also an expression of willingness on their part to extend full co-operation to Statistics Canada in supplying information required on current and future construction activity.

Since these exploratory discussions during 1971, Statistics Canada in association with other federal and provincial agencies, firms and other bodies has extended the scope of its surveys of current construction and of major future projects. It has been developing also practical procedures for making reliable estimates of all future activity in the principal construction categories and areas of the country.

More comprehensive knowledge of construction operations now in progress and of those to be undertaken in the foreseeable future clearly has wide potential

⁴The Economic Council earlier in its Annual Reviews called attention to the need for greater stability in government expenditures on construction. Cf. *Third Annual Review*, 1966, p. 116 and *Fifth Annual Review*, 1968, p. 196.

economic and social importance. It can provide crucial information for orderly economic planning and policy formulation in many other fields. It is a *sine qua non* also of longer-run programming in construction including manpower planning, technical, trade and professional training and the deployment and utilization of human and other resources. Improved knowledge of current and future construction activity is, moreover, a requisite for other more specific programs to counteract instability in the industry.

Those who have a large investment in the industry, whether they be tradesmen with skills acquired over many years or contractors who have carefully organized and developed their businesses, have a legitimate claim on a reasonable degree of security of employment. The fact that large numbers of these persons and others associated with the industry do not now have such security has been demonstrated in this study. Although sporadic efforts have been made to offset their insecurity, they and their families have suffered. The economy and society have also suffered. Moreover, nearly everyone has had to pay dearly on occasions through higher building and other prices and costs resulting from excesses taking place in construction markets.

The employers and workers who have taken advantage of these excesses in the past can scarcely be blamed since this is what has normally been expected of them. But today we face a wider question. Should these excesses be permitted to continue or should they be harnessed in a manner that better serves the interests of the industry, the community and the economy as a whole? Effective measures to channel the flow of construction work and to ensure a greater measure of employment security for those in the industry cannot be taken, however, without cost. At the same time this cost must be weighed against the still larger cost in both human and economic terms that results from allowing such instability to persist. Thus the answer to the question is now becoming clearer; — we cannot afford to postpone any longer a determined attack on the problem of instability in construction operations.⁵

There are steps that can be taken to effect a major change in the situation. One is to adopt as some countries have done a tight permit system which would control the amount and nature of construction operations from year to year and from season to season on a national, provincial and area basis. Such an approach if broadly accepted would conceivably achieve the over all stability goal desired. This might be realized, moreover, reasonably quickly but it would require additional administrative machinery and would likely involve some loss of freedom of action especially on the part of those associated with the industry.

Another approach is for the parties directly involved to develop incentives strong enough to effect a radical change in the flow of construction operations and thus to ensure a reasonable level of employment security for everyone permanently attached to the industry. Employment guarantees under such a plan would

⁵It is not suggested here or elsewhere in this study that the reduction of instability in construction operations would in itself remove instability in the economy generally. Rather it is stressed that effective action taken in this sector would reduce significantly the types of other action needed to maintain stability in all sectors, including fiscal and monetary measures, positive manpower and industrial relations programs, and well conceived trade and industrial plans, with or without a broadly conceived prices and incomes policy.

themselves provide a powerful stimulus to increased stability in construction operations generally. This would represent a positive attack on the underlying problem – the costs of which must otherwise continue to be paid by those directly affected and by the whole of society. Such an approach, in keeping with our democratic traditions, is explored more fully in the next section.

Employment Security Program

In addition to the development of fuller information about future construction activity the creation of a broad employment security program as a second major step offers some promise of both effective and acceptable action in reducing the crippling consequences of construction instability.

Such a program would require the joint participation of all those associated with the construction industry. This would mean the active involvement of contractors, contractors' associations, workers in all trades and professions, unions, clients of the industry and government on all levels. To ensure such involvement and also wide acceptability of the program both its outlines and essential details would need to be worked out by the four principal groups concerned, namely contractors, unions, private clients and governments. This would mean that the procedures required, including financial incentives, were developed by those to whom they would apply and hence would more likely be generally acceptable.

It would need to be recognized also that action under the program would have to be far-reaching, comprehensive and bold. The stubbornness and deep-seated nature of the problem of instability will yield to nothing less. Clearly too, fuller knowledge is required of future as well as current broad categories of construction operations on an area basis. Fortunately, as already noted, positive measures are being taken to help meet this need.

While agreement on the broad characteristics of an employment security program by both sides of the industry, its clients and governments may be reached relatively easily and quickly, spelling out its provisions in specific, practical and acceptable terms is likely to be more difficult. To help encourage consideration of possible directions such a program might take some tentative proposals formulated early in 1972 and included in a paper entitled, "Action to Bring About Greater Stability in the Construction Industry". This paper is reproduced in Appendix F in an amended form following a number of helpful observations received from contractors, union leaders, clients, government representatives and others over the intervening months.

In essence, it is suggested that an employment security program might be built around a form of guaranteed employment for those who have established a permanent connection with the construction industry. The emphasis is placed deliberately on employment since an enlarging of employment opportunities over time is regarded as the immediate objective of the program. Where reasonable annual employment or training cannot, however, be provided under the guarantee, an income supplement it is suggested should be paid from an accompanying employment stability fund, properly related to the existing Unemployment Insurance Program.

To arrive at a reasonable level or levels of guaranteed employment the estimates presented in chapter three of average employment of all construction workers are

used. These data are presented in summary form in Table XXXVIII for Canada and for each of the five major regions of the country. For convenience the total numbers registered with the Unemployment Insurance Commission as working in the construction industry are grouped into four time periods according to the length of their annual employment in each case. Those in Period I worked from one to 20 weeks; those in Period II from 21 to 32 weeks; those in Period III from 33 to 44 weeks and the remainder in Period IV from 45 to 52 weeks.⁶

Those falling in Period I, estimated for Canada as a whole in 1968 at 67,000 or 18 per cent of the total, might be regarded as having demonstrated too slight an attachment to the construction industry to warrant any future employment guarantee. They are essentially "in and outers" whose principal activity in the year in question, lay outside of construction. In many instances they would have an opportunity, of course, to establish a longer association another year but until they did so, they might be regarded as not yet having special employment security claim on the industry.

On the other hand all those falling in Periods II, III, and IV might receive employment guarantees provided they met the other conditions laid down. Initially, at least, until some experience were gained under the program, two levels of employment security might be introduced. A first, or lower guarantee, might be set at 33 weeks per year for all those who had an experience record of between 21 and 32 weeks of employment in construction over the previous year or four consecutive quarters. In 1968 there were an estimated 63,000 workers in Canada in the construction industry, or 17 per cent of the total, in Period II to whom such a guarantee might apply. A second, or higher employment guarantee might be set at 45 weeks per year. This could apply to all those who had an experience record over the previous year of four consecutive quarters, of 33 weeks of employment or more in the construction industry. Again in 1968 an estimated 86,000 or 24 per cent of all construction workers in Canada, fell in Period III namely 33 to 44 weeks. The remaining 146,000 or 41 per cent were in Period IV with 45 weeks and over. This second or higher guarantee would be open to all those in Periods III and IV but being set at 45 weeks it would be inoperative of course for all of those who continued on this or on a higher level of annual employment. Special incentives might be included to encourage winter employment and employment in remote areas. Similarly, disincentives might be provided to discourage overtime except where it is imperative.

The two proposed levels of guaranteed employment might be merged at the beginning or later into one level at 45 weeks, or at some other mutually acceptable figure. Whether a program were introduced initially on a regional, provincial basis or on a national basis, a single employment guarantee of 45 weeks assuming it applied essentially to those in Periods II and III, would cover 48 per cent of all workers in the Atlantic Provinces, based on the 1968 estimates in Table XXXVIII. In the Prairie Provinces it would cover 44 per cent; in Quebec 42 per cent; in British Columbia 40 per cent; and in Ontario 38 per cent. Such regional differences in the

⁶These time periods could be expressed in approximately alternative terms as I: one to 839 hours or one to 4.5 months; II: 840 to 1319 hours or 4.5 to 7.5 months; III: 1320 to 1799 hours or 7.5 to 10.5 months; and IV: 1800 to 2080 hours or 10.5 to 12 months.

average levels of existing employment security of construction workers would obviously have to be considered in determining realistic minimum employment targets under such a program. A 45-week minimum duration of employment for those covered by the second or higher annual employment guarantee is equal to approximately 10.5 months per year or 1800 hours at 40 hours per week. This would be regarded by many workers in the industry in Canada as a reasonable objective. It could only be achieved, however, with a moderation in wage rate increases compared with those during most recent years and with significant changes in current attitudes and practices on the part of employers, workers, clients and governments.

Beyond this it would likely be necessary to establish an employment security fund as a back up to the employment guarantees. Such a fund, as suggested in Appendix F, would itself promote increased stability in construction operations though providing incentives to those contributing to its creation and maintenance. Clients and firms which improved their continuity of employment record might receive tangible recognition of their achievement in reduced contributions to the fund. Alternatively, those with poor work records or which required unwarranted periods of overtime employment might be penalized.

It would probably be necessary to set forth in legislation the basis on which an employment security fund might operate including its relation to the existing Unemployment Insurance Program. This could be done either on a provincial or federal basis after the broad terms had been worked out and agreed upon by the parties concerned. These and the other provisions including those covering the conditions under which employment or income in lieu of employment or training might be guaranteed, the specific financial contributions by employers, workers and clients to an employment stability fund and the types of related action which each of the four principal parties involved might take to help ensure the success of the employment security program would need to be carefully worked out in writing and jointly approved. Some of the provisions would probably not need to be included in enabling legislation but they would constitute, along with the legislation, the basis on which a program might be administered. An independent body established under statutory authority, might be charged with responsibility for the administration. This body, might in turn be made responsible to a senior advisory agency composed of representatives of contractors, construction unions, private clients, governments and the general public.

Other Measures

It has become apparent from the above analysis that a prerequisite for effective action in reducing the wide year to year fluctuations in construction operations is substantially improved information on the nature and extent of current projects and of those planned to start in the near future. Equally it is clear that instability in construction has taken a heavy toll in human terms through employment insecurity and that one way of tackling the problem is for those groups most directly concerned, namely contractors, unions, clients and governments to develop jointly an acceptable and workable employment security program. In addition to these two

TABLE XXXVIII

Estimated Employees in the Construction Industry Contributing to Unemployment Insurance, their Average Weeks of Employment, Annual Earnings and Weekly Earnings, in Four Selected Yearly Work Periods, Canada and Regions, 1966 and 1968.

Yearly Work Period Weeks	Employees							
	Number		Percentage of Total		Average Weeks of Employment		Average Annual Earnings	
	1966	1968	1966 %	1968 %	1966	1968	1966 \$	1968 \$
CANADA								
I	43,000	67,000	12	18	13	12	2,100	2,400
II	59,000	63,000	16	17	27	27	3,200	3,700
III	91,000	86,000	24	24	39	39	4,500	5,200
IV	176,000	146,000	48	41	50	50	6,000	7,000
TOTAL	369,000	362,000	100	100	39	36	4,800	5,200
ATLANTIC								
I	5,000	8,000	14	21	13	13	1,500	1,500
II	8,000	9,000	21	23	27	27	2,200	2,700
III	10,000	10,000	25	25	38	38	3,400	4,100
IV	15,000	12,000	40	31	50	50	4,600	5,400
TOTAL	38,000	39,000	100	100	40	34	3,400	3,600
QUEBEC								
I	13,000	21,000	12	22	12	12	1,800	2,400
II	19,000	18,000	17	19	27	27	3,100	3,600
III	27,000	22,000	24	23	39	38	4,300	5,100
IV	52,000	35,000	47	36	50	50	5,800	7,000
TOTAL	111,000	96,000	100	100	39	35	4,500	4,900
							150	197
							115	137
							111	132
							116	140
							116	142

ONTARIO											
I	1-20	12,000	19,000	10	15	13	12	2,200	2,800	172	236
II	21-32	14,000	18,000	11	14	27	27	3,200	4,000	117	147
III	33-44	29,000	30,000	24	24	39	39	4,600	5,300	116	137
IV	45-52	68,000	60,000	55	47	50	50	6,300	7,200	125	143
TOTAL		123,000	127,000	100	100	41	39	5,100	5,600	124	146
PRAIRIE											
I	1-20	7,000	10,000	13	16	13	13	2,400	2,300	184	181
II	21-32	10,000	11,000	19	19	27	27	3,200	3,700	119	139
III	33-44	13,000	15,000	23	25	38	39	4,400	5,100	116	130
IV	45-52	24,000	24,000	45	40	50	50	5,900	6,900	118	138
TOTAL		54,000	60,000	100	100	38	37	4,600	5,100	120	139
BRITISH COLUMBIA											
I	1-20	4,000	8,000	11	21	13	12	2,800	2,800	210	235
II	21-32	8,000	6,000	19	16	27	27	4,400	4,900	162	182
III	33-44	12,000	9,000	30	24	39	39	6,000	6,400	154	165
IV	45-52	16,000	16,000	40	39	50	50	7,200	7,800	146	156
TOTAL		40,000	39,000	100	100	38	36	5,800	5,900	153	167

Source and interpretation of data, see Table VI.

basic approaches other measures can make a contribution to achieving greater stability in building activity and in the economy generally.

One of these measures is the extension of well planned land assembly and development programs. These have increased in number and size in several urban areas throughout Canada in recent years. Frequently they have been publicly financed and have provided those purchasing land for both home and commercial purposes with much lower cost properties than would have been the case had land values been left open to the speculative pressures emerging from and contributing to inflation since the mid-1960s. By acquiring land in substantial quantities for future residential and non-residential needs, not only zoning plans but those related to the timing of new construction, can be more carefully developed. With direct public expenditures on construction in Canada amounting in most recent years, as will be seen in Table XXXIX to over one third of all expenditures, and influencing, it is estimated, indirectly another 25 to 30 per cent of the total, governments on all levels are clearly in a position to exert a strong influence on the nature and timing of construction operations.

TABLE IXL

Estimated Annual Expenditures on Construction by Private Clients, Canada, 1967-1972^a

	1967	1968	1969	1970	1971	1972
	(\$ millions)					
Private:						
Business Enterprises	3,600	3,600	4,100	4,400	4,890	4,920
Percent	31	30	31	32	31	30
Institutions and Housing	3,400	3,900	4,600	4,300	5,200	5,560
Percent	29	32	35	32	33	33
Public:						
Government Departments ^b	2,200	2,300	2,400	2,600	2,960	3,100
Percent	19	19	18	19	19	19
Government Owned ^c						
Enterprises	1,500	1,400	1,200	1,400	1,670	1,920
Percent	13	11	9	11	11	12
Government Operated Institutions and Housing ^d	900	1,000	900	900	9,030	920
Percent	8	8	7	6	6	6
TOTAL	11,600	12,200	13,200	13,600	15,650	16,420

^aActual expenditures on new construction and repairs, 1967 to 1970 actual expenditures (preliminary) 1971; intended expenditures, (revised) 1972.

^bIncludes data for departmental Crown corporations and excludes data for proprietary Crown corporations which are all classified as Government Owned Enterprises. Agency Crown corporations, on the other hand, are classified in part under Government Owned Enterprises and in part under Government Departments.

^cIncludes, in general, government owned establishment whose principal source of revenue is derived from the provision of goods and services to the public.

^dIncludes only federal government housing and provincial and municipal hospitals and educational institutions.

Source: *Private and Public Investment in Canada, Outlook 1972*, Statistics Canada and Department of Industry, Trade and Commerce.

Another important step which has a bearing on both construction costs and productivity and hence can make a contribution to reducing the variations in them and in construction operations generally is the development of improved building standards. Fortunately progress is being made in adopting revisions in the National Building Code. Outdated local and provincial building standards are being removed and greater uniformity in building practices is emerging. Further action in standard setting is needed in both Canada and internationally. Closely related to building codes is the need for attention to the quality of work performed and to safety both for their own sake and for the positive influence they can have in increasing productivity, raising living standards and reducing costs.⁷

A further key area affecting construction costs and stability which requires more attention is action to reduce the wide fluctuations in financing charges on new investment and on existing properties. The federal and provincial governments, under the National Housing Act and other legislation, have helped to moderate these charges through large infusions of public funds and through providing an improved credit base for many home owners, farmers and other business operators. Other forms of effective action need to be explored which, while continuing to permit free initiative in this important field, will ensure that it, in fact, contributes to the overall task of achieving stability rather than tending to exacerbate the opposite condition.

Each of these measures suggest that action to cope effectively with instability in construction operations requires a much more global view of the industry and of the economy than most Canadians have been accustomed to in the past. Individual contracting firms and unions have been able at various times to take full advantage of their strong positions in the market with little or no regard for the consequences of their separate or joint actions on their communities, their industries or the economy as a whole. Such actions have not been condemned because they have been broadly accepted in the past as the common pattern. They are now being seriously questioned, when examined from a broader and longer-run point of view.

Final Conclusions

This study has demonstrated that market forces in the construction industry when left to themselves produce excesses leading to wide year to year and seasonal fluctuations in the volume of construction and employment. It has been in the year-to-year rather than in the seasonal swings that the boom and bust element has chiefly occurred. The swing of the market pendulum has obviously profited and harmed certain individuals more than others. Some associated with the industry in employer and worker groups have both gained and lost from the market fluctuations but more often those able to protect themselves have tended to gain much of the time or at most have been harmed relatively little. Meanwhile, others

⁷In Britain the National House Builders Registration Council performs a service in maintaining and improving standards. Through its own body of inspectors the Council strikes off its register firms which after due warning fail to improve their standards of construction. Expulsion serves as a strong sanction since Building Societies which provide most of the residential financing in Britain will not lend money on new properties which do not have a National House Builders Registration Council Certificate.

in a relatively weak position have suffered severely. Society and the economy generally, moreover, have had to pay much of the price involved.

There are two further points which this study has demonstrated. First, the consequences of these market excesses in construction cut both deeply and broadly into the whole fabric of the economy. Second, Canada can no longer leave these underlying market forces unexamined, the basic questions they pose unanswered, and the policies required in the interests of all, undeveloped.

Looked at in a wider setting, industries and governments have both tended in the past to expand their capital investment programs during periods of buoyancy or expected buoyancy in the economy, and to contract them when less prosperous conditions prevail or are anticipated. Some governments have attempted, in more recent years, to moderate their actions in this regard and to use construction expenditures as an instrument for regulating excessive pressure or slackness in the economy. On occasions these latter efforts have had a positive influence but they have not been on a large enough scale, or sufficiently well directed at those sectors or geographic areas of the economy most needing attention, to produce widespread stabilizing effects. Thus, in Canada, while strong demand conditions persisted in much of the economy throughout the sixties, the value of all construction work performed, expressed in both actual and constant dollars, increased each year. The resulting market pressures were compounded by the sharp year-to-year fluctuations occurring within the total investment program, in residential building, non-residential building and industrial construction. Pronounced peaks and valleys, the record shows, were moreover, a common phenomenon in many local construction markets and regions across the country.

From the examination made of the nature and extent of these inflationary pressures in various settings and of their impact on the economy, it has become clear that construction market forces, whether these relate to financing charges, land values, wages and working conditions or building materials and supplies, are deeply affected by extreme fluctuations in demand and supply. Attempts, moreover, to restrain increased prices and incomes without tackling the basic disturbances in the market, it is equally clear are bound to have a minimal impact.

Thus it is concluded that deliberate, far-sighted and courageous measures are needed to bring about a more even flow of construction activity and employment. Such measures, some of which are suggested in this final chapter, call for more advanced and co-ordinated planning by governments and by the private and public clients of the industry. Equally they require new approaches and attitudes and the discarding of some old ones on the part of construction employers, tradesmen and professional personnel to achieve increased employment security for all those dependent on the industry. Changes will not be easy to achieve nor will they come quickly. They will be realized only with serious and strenuous efforts by each of the parties involved. Effective steps taken to bring about greater year-to-year and season-to-season stability in the construction industry will, however, go a long way towards restraining and reducing the inflation generating pressures that have been plaguing Canada and many other countries for some time. Such action, at the same time, will make a positive contribution to the achievement of stability in the economy generally.

APPENDIX A

SUBMISSION BY THE JOINT COMMITTEE OF THE PIPING INDUSTRY ON PRICES AND INCOMES¹

The Joint Committee wishes to support the Prices and Incomes Commission in its efforts to combat inflation. However, it takes a great deal of courage for representatives of labor and management of an industry to meet to discuss a subject as sensitive to both parties as wages and profits. For this reason, general areas of agreement were first established before examining wages and profits.

¹This Submission, dated May 8th, 1970, was presented to the Prices and Incomes Commission in Ottawa on June 1st, 1970, after receipt of the following letter also dated May 8th, from the Joint National Committee of the UA/CPMCA (United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States of America and Canada/Canadian Plumbing and Mechanical Contractors Association). The name of the latter body was later changed to Canadian Mechanical Contractors Association.

“Dr. J.H. Young, Chairman
Prices and Incomes Commission
OTTAWA, Ontario

Dear Dr. Young:

A meeting of a Joint Committee of representatives of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry and the Canadian Plumbing and Mechanical Contractors held February 23rd and 24th, 1970 in Montreal, heard a brief resumé of the conclusions of the National Conference on Price Stability through the mechanical contractor representative at that meeting, E. Twizell of Montreal.

We were also informed that you would meet with representatives of our Joint Committee at an early date. It was a unanimous feeling of the Joint Committee that there would be a great deal of value in labor and management meeting to see if there was a common ground or area of agreement, briefs by the Canadian Construction Association and the Canadian Labor Congress notwithstanding.

(Continued on next page)

AREAS OF GENERAL AGREEMENT

1. *Working Conditions:*

It was generally agreed that good working conditions are conducive to greater production and provide for greater safety.

2. *Training and Manpower Planning:*

The Committee is convinced of the advisability of Joint Training and Manpower Planning. It set the stage to reach an equilibrium of the workforce against supply and demand, updating technology, and development of skills for greater employment. The supervisory force can by given special training which greatly enhances the efficiency of the job.

3. *Marketing:*

The expansion and recession cycles in the post-war period has put tremendous strain on the industry. There is a need for well organized and aggressive marketing activities to work towards a sustained and steady growth and to minimize the peaks and the valleys where, on occasion, in the past, the demands of the peak requirements for skilled labor are double those in the recession period. Reserves of skilled tradesmen of that magnitude are just not available.²

Technology:

There is general agreement that technology can bring about progress and that it must be accommodated. This Industry has had some reservations on certain packaging but is now working to provide a skilled workforce for manufacturing and prefabrication and has entered into agreements with several manufacturing firms of plumbing products.

Lack of Co-ordinating and Scheduling of Construction:

It is recognized there are many difficulties, on the part of the federal and provincial governments, utilities, and natural resource industries, in co-ordinating and scheduling of their respective construction projects to provide a

The Committee has appointed as its delegation to meet with the Commission, the following gentlemen:

E. Twizell, Montreal, CPMCA Director,
E.H. Watson, P. Eng., Calgary.
L. Martel, Ottawa, Business Manager, Local Union 71.
J.R. St. Eloi, Vancouver, General Organizer.

Yours very truly,

P. Erhardt/for
R. Belanger
General Organizer, U. A.

P. Erhardt / for
M. J. Griffin
Chairman
UA/CPMCA Joint National Committee"

The submission was received on behalf of the Prices and Incomes Commission by George V. Haythorne and George E. Freeman, Commissioners and Donald V. Brazier of the Prices Review Division.

²*Wage Movements and Wage Determinants in British Columbia*, John de Wolf.

more even and regulated demand on the construction industry. Regardless of the difficulties, herein lies some of the root causes of inflationary trends in the construction industry.³

WAGES:

Both parties agree that wage levels in the construction industry influence and escalate wages in the manufacturing and service industries. Both parties agree something has to be done to avert economic disaster. However, there are many considerations which need to be given to the matter. The construction worker sells his skills an hour at a time. When the contractor completes a project, the tradesman, other than key personnel, is often returned to the “shelf” until another project commences. This tradesman may very well sign on with a different contractor. Lack of job security and company loyalty are undoubtedly reflected in wage settlements.⁴

The workforce in this industry in Canada has good mobility and frequently the expansion of the natural resource industries in one or other of the provinces will pick up the slack. However, too often expansion of natural resources industries coincides with Government sponsored projects, thereby setting the stage for substantial inflationary trends in wages. There have been four occasions in the post-war period when this has occurred and we are now threatened with a fifth ‘peaking’. We will project the situation as it appears to be unfolding: Industrial activity in British Columbia, Saskatchewan and Manitoba is presently at a very low pulse with the result there is considerable unemployment in the trade. In Ontario, the overall construction picture is varied. Activity in the various union jurisdictions during the next twelve months will be good in Toronto, Hamilton, Ottawa, Kitchener, Windsor, Barrie and Sudbury. However, in the other thirteen (13) jurisdictions, activity is expected to range from fair in Port Hope, Pembroke, Sarnia and St. Catharines, to poor in the remaining areas. In Quebec, the outlook is poor, with New Brunswick and Prince Edward Island having only fair prospects. Cape Breton in Nova Scotia will have considerable activity and there is an estimated \$50 million going into Stephenville and \$130 million into Come-By-Chance, Newfoundland.

Alberta has several major gas plants scheduled for construction starting in early Spring 1970 and lasting through the balance of the year. The demands for pipefitters on these projects will more than pick up the slack in unemployment in the other Western Provinces. For example, we have learned seven of some nineteen projected gas plants will require in excess of 1,100 pipefitters. This explains then why these industries are offering incentives such as six and seven 10-hour work days in order to acquire men. It is the Joint Committee’s opinion there is very little gain in construction production for the purchaser by offering substantial overtime and a great deal of harm can be done to the community as a whole. It is pretty difficult to ask a man to consider seriously curtailing wage increases when industry seems to be willing to pay these exorbitant wages.

³*Ibid.*

⁴*Construction Labour Relations*. Carl Goldenberg and John H.G. Crispo, *op. cit.*

PROFITS:

Contractors in the construction Industry work to a derived demand. If the Government, institution of an industry decides to make an addition or build a new plant, the construction industry sets about to bid on these projects. The contractor assembles the projected labor and material costs and knows he must be low to get the job! Earnings of the Mechanical construction industry are in an unhealthy state.⁵ Efficiency in management, manpower planning, sustained market growth are some of the ingredients needed to effect reduction in costs. Traditionally, *the contracting industry works on firm prices and many, many times are called upon to absorb increases in materials and labor*. This has to be an anti-inflationary contribution.

RECOMMENDATIONS:

The Joint Committee of the Piping Industry would urge a conference, by region of federal and provincial governments, senior representatives of the forest, petroleum, mining, and utility industries to review inflationary influences on the whole of the Construction Industry with a view to restricting overtime on natural resource and government projects. Hopefully, such a conference might also investigate and recommend the steps necessary to improve economical planning to balance out supply and demand in the construction industry. Both parties are agreeable to participating and assisting with such a conference.

⁵*The Mechanical Contracting Industry 1967*, Statistics Canada, op. cit.

APPENDIX B

RESPONSE OF THE PRICES AND INCOMES COMMISSION TO THE JUNE, 1970 SUBMISSION OF THE UA/CPMCA JOINT COMMITTEE¹

My colleagues and I appreciated the opportunity of meeting with the members of your Joint Committee in Ottawa on June 1st and I am pleased to be able to join your full Committee in Calgary today.

We were impressed at the first meeting with the determination, on the part of those representing the Union and of those representing the Contractors Association, to take action on a number of joint problems you had identified. We were impressed too by the tangible evidence of your joint support of the efforts of our Prices and Incomes Commission to combat inflation. As you said this took courage on your part. Realizing this your actions are doubly appreciated.

You set out a number of pertinent observations in your Submission to the Prices and Incomes Commission under what you called "Areas of General Agreement". You will recall we discussed each of them in some detail. I shall not refer to them individually except to say that we followed up as promised with respect to overtime hours particularly on the construction of the new gas plants in Alberta. Since the meeting I have been in touch with Officials of the Alberta Department of Labour and am pleased Robert d'Esterre, Chairman of the Alberta Board of Industrial Relations, is with us today.

With the support of both Union and Employer Groups, the Alberta Board of Industrial Relations has been able to make substantial progress in establishing reduced limits on hours of work in the construction industry. Bob d'Esterre will be telling you more about this no doubt, later.

¹ By George V. Haythorne on behalf of the Prices and Incomes Commission, Palliser Hotel, Calgary, Alberta, July 7, 1970.

The other principal development that has taken place since our meeting at the beginning of June is the decision by the Prices and Incomes Commission to propose a number of criteria to bring about more reasonable levels of increases in wages and salaries over the coming year.

The announcement of these criteria grew out of lengthy discussions within the Commission and with representatives of governments, unions and employers over several months.

The proposed criteria really go back to the action taken at the National Conference on Price Stability in February, when a firm and rather far-reaching decision was taken by well over 200 senior representatives in key industries across the country, to check price increases during 1970. This decision, which in the end was unanimous, was not easily reached.

At the same conference action was taken by representatives of major national fee-setting professional organizations to recommend to their provincial affiliates that increases in fees should be postponed or limited during 1970. In practically all cases the provincial affiliates have gone further in an effort to assist in an all out effort to contain inflation and have decided there shall be no increases this year.

The Commission met with the Heads of all eleven federal and provincial governments after the conference in February. They endorsed the action taken to check price increases and promised a number of additional steps would be undertaken.

These additional steps included examining what further action might be taken to introduce or strengthen rental reviews or controls. Since this meeting, four provinces have introduced amendments to their Landlord and Tenant Acts, providing for reviews of rent increases.

The governments also agreed to exercise restraint in their spending, taxing and borrowing, keeping in mind that essential services would have to be maintained and that economic development should not be retarded.

As a follow-up to these conferences in February, the Commission has undertaken a number of price reviews. As a result several important rollbacks in price have been made and in several other cases firms have agreed to reduce or not to proceed with contemplated price increases.

The Commission also began, in March and early April, a public education campaign directed at Canadian citizens generally to help them understand the causes of our current inflation, its consequences, steps that have been taken to cope with it and further action needed to bring about price stability, economic expansion and increased employment.

The combination of these various steps is having some impact on curtailing inflation and on promoting economic expansion although clearly more remains to be done before it can be said that the fight is won.

The Commission has recognized from the beginning that there are many difficulties in the way of getting the recent high levels of wage and salaries increases reduced. One of the most serious of these is the wide-spread expectation that wages and salaries must be higher in order to offset increases in prices and costs of living.

Gradually the message appears to be gaining acceptance that if price increases can in fact be brought down, the same real income can be obtained by Canadian

workers with a lower money wage or salary increase as would be the case with higher price increases and higher wage and salary increases. Moreover, under these conditions, since the economy as a whole benefits, all Canadians benefit too.

There are other problems which confront union leaders, the membership they serve and employers. Collective bargaining is a bilateral operation and the results are public knowledge. This is not always the case as we know in reaching decisions on some other incomes and in determining some prices.

It has also been the practice for union members and for workers generally to press for as high wages as they can get just as it is the general practice of employers to press for as high profits as they can get. In each case the efforts are usually backed up with as much power as possible. While it may be true that it is frequently through the exercise of power on both sides that differences are effectively resolved, a serious problem arises when the exercise of this power is in conflict with what is required in the economy as a whole.

More and more, both those representing unions and those representing management are I think recognizing that it is not in the interests of the economy or in their own longer-run interest to push their power beyond sensible limits.

Concerned as it is with the serious consequences of the continuing flames of inflation, fanned as they have been by actions of all groups: governments, employers, workers and the general public, the Commission thought it would be helpful to propose criteria to apply in determining reasonable increases in prices and wages. It is this basic concern that has prompted us to take the steps we have.

In the case of wages and salaries, it is proposed a wage which represents a combination of the average long-term annual increase in productivity of 2.5 to three per cent and a reasonable expectation of the increase in the cost of living during the coming year of from three to 3.5 per cent, or a total of six per cent, is a reasonable figure to shoot at as an upper limit.

In suggesting this target figure we do not have in mind that this would be the level in all cases. For those in low income categories, particularly those now receiving under \$2.00 per hour, it is not reasonable to expect much restraint to be exercised. On the other hand, those in high income groups or those we have obtained large wage increases over recent years can be expected to make a greater contribution.

We have recognized, too, it would be unrealistic to expect firm positions taken by the parties in collective bargaining through negotiations which have been under way for some months to be withdrawn entirely.

In your industry, where substantial wage increases were obtained in 1969, there has been a drive on the part of other unions which did not negotiate at that time to obtain reasonable parity.

These wage increases in the construction industry have been high, as have other costs including those for land, capital and materials—so much so that the combination of these have pushed rentals and the price of construction of all kinds to peak levels.

Through your Joint Committee there are, I would suggest, two steps which might now be taken, first, to identify the problems that may be posed for you in your own sector of the industry as a result of the earlier call for price restraint and these recent wage and salary proposals by the Commission and, second, to work out over

the coming months a set of objectives with respect to labor and other costs that would appear reasonable to both of you.

After working out a sensible set of objectives in your case and in the case of other sectors of the industry, we might then arrange a meeting of representatives of all groups in the construction industry with the objective of working out a joint attack on this difficult problem—a problem though, which is an urgent one for the economy with mounting unemployment along with continuing inflationary pressures.

The construction industry, which employs close to one half million workers, has been a pace setter in both costs and wages in recent years. We must find sensible answers for the future, not only because of the importance these answers will have for you but also for the economy as a whole.

Your industry has been criticized by other groups for some of the steps you have taken. You may feel this is not entirely justified because of external forces beyond your control. Be that as it may, by continuing to work together and by developing practical approaches for the future with respect to both prices and incomes, you will earn wide commendation in tackling positively the difficult problems your industry and the economy face.

APPENDIX C

ACTION TO RESTRAIN RISING COSTS IN THE CONSTRUCTION INDUSTRY

Measures Proposed by the Joint National Policy Committee of the Plumbing and Pipefitting Industry in Canada¹

The Joint National Policy Committee, representing the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States of America and Canada, and the Canadian Plumbing and Mechanical Contractors Association, has reviewed over the past year short and long-term problems presently facing the industry.

Growing out of this review, it has been agreed that the most serious of these problems is the rapidly rising costs of construction.

Recognizing the adverse consequences of rising costs for the industry and for the economy; the serious disruptions in production and employment accompanying fluctuations in the levels of construction operations, which both contribute to and results from rising costs; and the fact that inflation sharply affects the life of every Canadian; the Joint National Policy Committee decided in May, 1970, to make a submission to the Prices and Incomes Commission indicating support of its efforts to combat inflation.

¹These proposed measures were developed initially by a small representative group which met several times following the Joint National Committee in Calgary on July 7th, 1970. Those comprising this group which met in Montreal, Toronto, Purdue and Winnipeg were: J. Russell, St. Eloi, Vancouver, Robert Watson, Toronto, Roger Belanger, Montreal of the U. A.; Ed. Twizell, Montreal, Fred Reynolds, Toronto, and David Whiting, Vancouver of the CPMCA, (now Mechanical Contractors Association of Canada, MCAC); John A. Long and Peter Erhardt, who provided secretarial services, and George V. Haythorne of the Prices and Incomes Commission. The final draft was submitted to a meeting of the full National Joint Policy Committee under the Chairmanship of Alex Rawlings of Victoria, in Winnipeg and approved unanimously as amended on that occasion on November 17th, 1970.

Since that date several joint discussions have continued with one of the Commissioners. Arising from these discussions, the Joint National Policy Committee of the plumbing and pipefitting industry has reached agreement on the following proposed measures to restrain rising costs in the construction industry. To be effective, these measures, or acceptable variations of them, it is recognized, require the endorsement and support of contractors and unions in all sectors of the construction industry, of private and public clients of the industry and of governments.

Measures by Contractors

1. Keep increases in controllable costs to a minimum and hold profits in 1971 at a level such that they will be no higher, relative to volume of business, than those in 1970. Should abnormal circumstances prevail in 1970, an average of the last three years would be used as the base period. To help ensure that effect is given to these objectives, spot reviews would be undertaken by the Prices and Incomes Commission.

2. Insist on firm price quotations on materials, supplies and services for the duration of construction contracts; if necessary, with the support of industry associations.

3. When price increases on materials, supplies and services are regarded as excessive refer them to a regional or national office of the construction industry, which in turn would bring them to the attention of the Prices and Incomes Commission.

4. Contractors moving into an area to undertake construction projects to abide by the terms of existing labor provisions or working conditions prevailing in the local area concerned. Should serious issues arise in connection with the application of any such labor provisions, covering both wage and non-wage items, they would be referred to a joint labor-management committee for resolution.

5. Limit increases in compensation for management and other staff in line with the trend rate in productivity improvement for the economy as a whole and reasonable expectations of increases in the cost-of-living under current economic conditions and agree that information on the compensation received by all such groups be made available through Statistics Canada and other agencies. In making adjustments in compensation two of the considerations to be kept in mind are: those in high income groups are generally in a better position than those with low incomes to assist in resisting price and cost increases; and it is not reasonable to expect the compensation of employees in one firm to fall behind substantially that of those doing comparable work in the area.

Measures by Unions

1. Keep demands in negotiations over the coming year for increases in wages and fringe benefits in line with the national trend of productivity improvement and reasonable expectations of cost-of-living increases under current economic conditions.

2. Recognize, with lower price and cost increases generally throughout the economy, an annual improvement in real income can be achieved with lower annual wage rate increases than would be required otherwise.

3. Extend, as applicable, the principle that a differential in wage rates should apply between construction tradesmen in maintenance and manufacturing jobs and those in on-site building operations who are subject to uncertainties and frequent changes in employment.

4. Support measures to help bring about a healthy expansion of the industry through technological change, and the removal of out-dated and unnecessary work practices, thereby increasing productivity and reducing costs.

Measures by Contractors and Unions Jointly

1. While recognizing the existence of differences in wage rates between zones, regions, trades and sectors of the construction industry, develop bargaining on a broader basis to bring about greater uniformity in the timing and levels of wage increases and in the extent and character of working conditions.

2. Recognize prevailing earnings in most sectors of the construction industry now provide tradesmen with an acceptable level of compensation for their contribution to the industry and to the economy and agree that this principle should apply generally throughout the industry.

3. Keep increases in wages and fringe benefits negotiated over the coming year in line with the national trend of productivity improvement and with reasonable expectations of cost-of-living increases under current economic conditions.

4. Acknowledge some variation in the size of increases in wages and fringe benefits may be justified between areas, depending on uneven levels of settlements during recent years, unreasonably wide regional disparities or other factors.

5. Accept that increases to take effect in 1971 and in 1972, already contained in some collective agreements covering construction workers, exceed substantially a level generally regarded as supportable under current economic conditions; agree that the parties concerned will examine such increases in the light of these measures to restrain excessive cost build-ups in the construction industry; and agree those who will be negotiations in 1971 will give prime consideration to these measures rather than use such increases as a pattern for settlements in an area or province over the coming years.

6. Refuse to be a party to interim, or free-ride agreements and other arrangements between contractors and unions entered into on condition that additional benefits be granted if achieved by employees of other contractors in the same industry; to "whip-sawing"; to "leap-frogging"; and to other bargaining tactics which result in unwarranted increases in labor cost.

7. Resist attempts by owner-clients to have jobs undertaken or completed with little or no regard to the adverse effect of such actions on costs and labor relations. When efforts to resist are unsuccessful, bring the matter to the attention of a joint committee of the industry for resolution or for reference to the appropriate provincial government or to the federal government.

8. Acknowledge long daily and weekly hours usually add to costs and reduce productivity, and agree extended and excessive overtime work be eliminated except under special or exceptional circumstances.

9. Promote year-round employment for construction workers through advance planning and the co-ordination of deliberate efforts to this end by the construction industry, other industries and governments.

10. Seek the co-operation of the Department of Manpower and Immigration at the national and regional levels and, locally, through Canada Manpower Centers; of appropriate provincial government departments; and of other agencies, in forecasting labor and occupational needs and in planning manpower supply to facilitate training and mobility, to reduce idle time and generally to improve productivity in the industry.

11. Co-operate with federal and provincial governments and others concerned to ensure: the development of up-to-date and effective training and retraining programs on a country-wide as well as on a regional and local basis; the transferability of skills held by workers among provinces and regions, through the Red Seal Program and in other ways; and the undertaking of an objective, comparative evaluation of all trades in the construction industry in Canada to provide a realistic base for training, for collective bargaining and for other purposes.

12. Recognize work environment and motivation have an important bearing on the interest and satisfaction employees receive from their jobs and on their contributions in them, and implement scientifically tested concepts and procedures, in these and related areas which benefit morale and productivity, through the training and education of supervisory and management personnel and in other ways.

13. Extend the development of, and participation on a senior level in, continuous labor-management consultation on a local, regional and national basis to deal, particularly between periods when negotiating collective agreements, with such matters as productivity improvements, training, retraining, manpower allocation, pensions and their portability, innovations in building technology including prefabrication, and evening out the flow of construction work.

14. Undertake through employer and union auspices, respectively, an active promotional program aimed at bringing about acceptance of these measures as they apply to contractors, members of unions and all other employees.

Measures by Private and Public Clients and by Governments

1. Develop plans for major new construction projects over a continuing five-year period. Using these as a basis, establish a mechanism for determining acceptable economic and social priorities among such projects on an area and national basis and for working out with the construction industry suitable procedures for applying them. Besides counteracting potential cost increases, a more co-ordinated and planned approach would promote increased productivity, more secure employment and greater economic stability in the industry and in the economy.

2. Public and private clients to standardize their requirements for construction services, as far as possible, and consolidate these into larger and longer-term contracts where practical.

3. Promote through legislation and in other ways the broad application of the National Building Code.

4. Develop land assembly, taxation and other programs to reduce speculation in real estate and promote greater stability and certainty in land and capital costs.

5. When incentives are provided by government to encourage economic expansion in an area, and when governments or government agencies themselves undertake developments, give advance consideration to the effects of any major construction projects involved on the economy of the area and on prevailing working and living conditions.

6. Extend government-industry training, employment and income security, and other programs, including research, to assist the industry in coping with periodic shortages and over-supplies of skilled workers, labor mobility, technological changes and other issues of special concern to the construction industry.

7. Governments to extend the collection and analysis of information on the construction industry on a co-ordinated basis, including costs, prices, incomes, working conditions, manpower supplies and needs, extent of collective bargaining, contents of collective agreements, productivity and other subjects to facilitate industry and government action in the labor and related fields.

APPENDIX D

SHEET METAL WAGE SETTLEMENT, LONDON, ONTARIO¹

Introduction

The Prices and Incomes Commission has completed an examination of the factors leading to the settlement signed on March 16th, 1971, by members of the London Sheet Metal Contractors Association and Local 473 of the Sheet Metal Workers' International Association. This action was taken by the Commission in response to wide-spread concern about the size and timing of the settlement and its implications for negotiations now in progress in the construction industry in Ontario and in other parts of Canada. The examination, which was welcomed by both of the parties involved in the settlement, received the full support of the Government of Ontario.

Over the last several months the Commission, in co-operation with provincial departments of labor, has been participating in joint discussions involving both contractors and unions on ways of bringing construction cost increases in Canada under control. Following a number of meetings with the Joint National Policy Committee representing the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry and the Canadian Plumbing and Mechanical Contractors Association, a statement entitled "Action to Restrain Rising Costs in the Construction Industry" was produced and approved by the Joint Committee. The measures outlined in this statement have since been discussed with executives of construction Associations and Building Trades Councils in Ontario, British Columbia, Alberta, Nova Scotia and New Brunswick, and with federal and provincial government representatives and have been generally well received. Many

¹ Report issued by the Prices and Incomes Commission, Ottawa, April 2, 1971.

of these measures are, however, of a longer-term nature and cannot be expected to produce results quickly.

In the view of the Commission a determined effort to restrain cost increases in the construction industry is long overdue. This industry accounts for approximately 16 per cent of the Gross National Product in Canada, directly employs over 400,000 workers, and indirectly employs thousands more. Because of its size and influence on costs and prices in other industries, an early and substantial moderation of cost increases in this industry is essential for the achievement of reasonable price stability in the economy as a whole.

The settlement reached by the sheet metal workers and contractors in London involved one of the first of some 200 major agreements in the construction industry that will be renegotiated in Ontario this year. The settlement provides an increase in total compensation of nearly 40 per cent over a two-year period. If other construction settlements in Ontario follow the same pattern, there is no doubt that the effect will be a further substantial escalation of costs affecting many industries.

Groups Interviewed

In the course of conducting the examination, the Commission held meetings with the following:

1. The Executive and the Business Agent of Local 473 of the Sheet Metal Workers' International Association.
2. The London Sheet Metal Contractors Association.
3. The London and District Building Trades Council.
4. The Executive of the London and District Construction Association.

The Settlement

The present three-year agreement between sheet metal contractors and the union in the London area expires on April 30, 1971. The compensation package provided by this agreement totals \$6.13 per hour. This includes \$5.40 per hour for wages, eight per cent of 43 cents per hour for vacation pay, and 30 cents for welfare, pension and health plans for each hour worked.

The new contract which is to become effective on May 1, 1971, provides \$5.80 per hour wages as of that date, 46 cents per hour vacation pay and 50 cents per hour for welfare, pension and health plans, for a total of \$6.76. Six months later, the hourly wage is to increase to \$6.40 which automatically increases vacation pay to 51 cents per hour. Total compensation at that time November 1, 1971, will amount to \$7.41 per hour. On May 1, 1972, the hourly wage rate is to become \$7.40 per hour, and vacation pay is to increase to nine per cent of 67 cents per hour. The rate of compensation from May 1, 1972, to the end of the contract on April 30, 1973, will be \$8.57 per hour.

The total increase in the hourly rate of compensation over the life of the contract will be \$2.44 or 39.8 per cent which is an annual compound rate of change of 18.2 per cent. The contract also provides increases in travel expenses and board allowances.

The Position of the Union

Following notification to bargain early in January 1971, Local 473 held several union meetings at which a set of demands was gradually worked out. The union negotiating committee had its first meeting with the contractors on February 11, 1971, for the purpose of discussing overall contract proposals excluding money items.

On February 25, 1971, the contractors overall proposals, which did not include money items, were in turn discussed. As it evolved, the discussion covered money items. The union put forward its demands in this regard and, before the meeting ended, a tentative understanding was reached. On March 3, 1971, a Memorandum of Agreement was signed between the two parties, including agreement on money items.

The union representatives expressed surprise at the speed with which the contractors had been willing to reach an agreement which, as far as the total wage increase is concerned, was close to the union's original demand. The union's expectation was that two or three further meetings might have been required for meaningful bargaining to take place on wage rates.

In establishing their original demand for an increase on May 1, 1971, of \$1.25 and another \$1.00 on May 1, 1972, the union had examined the rates paid to sheet metal workers in selected cities, particularly in the south-western area of the Province.

Current and future hourly wage rates paid to sheet metal workers in various Ontario centers are set out in Table A-1.

TABLE A-1
SHEET METAL HOURLY WAGE RATES FOR SELECTED AREAS

	Rates March, 1971	New or Existing Agreements ²		
		May 1, 1971	Nov. 1, 1971	May 1, 1972
London	\$5.40	\$5.80	\$6.40	\$7.40
Sarnia	6.34	6.81		7.30
Windsor	6.15			
St. Catharines	5.55			
Kitchener	5.55			
Hamilton	6.50			
Toronto	5.98			
Ottawa	5.40			
Sudbury	6.05			
Sault Ste. Marie	5.07			
Thunder Bay	5.55			

¹Data taken from *Schedule of Hourly Wage Rates, Holiday Pay Assessments and Standard Work Weeks in the Building Trades in Canadian Centers*, July 1, 1970, Canadian Construction Association.

²Data taken from Collective Agreements.

The original union demands included a number of other items. Among these were an increase from eight per cent to 10 per cent in vacation pay as of May 1, 1971; height pay amounting to 50 cents per hour; and a parking allowance for workers when on center town projects. The last two items were deleted during the

negotiations and, as noted earlier, vacation pay was increased to nine per cent as of May 1, 1972.

The union knew that bids were due shortly on sizable work contracts and that the sheet metal contractors would want to reach a settlement as early as feasible to be in a position to work out firmly-based estimates of labor costs, as part of their total bids.

Another factor which was said by the union to have played a part in speeding up the conclusion of the settlement was a rumored rejection by sheet metal workers in another center in the province of a proposed three-year agreement providing for three consecutive annual increases of \$1.00 each.

In view of what the union regarded as unsatisfactory past experience in co-ordinating wage bargaining with the unions that are members of the London and District Building Trades Council, the Sheet Metal Union stated it preferred to carry on negotiations directly. The local union views its function essentially as attempting to obtain the best possible contract terms for its members.

The union also pointed to the jointly supported apprenticeship program for sheet metal workers in the London area. This had contributed, it stated, to a high quality performance by tradesmen and to increased productivity.

The London and District Building Trades Council, in a later discussion, supported the need for more advance planning by clients, a more even flow of construction activity and joint action by governments, clients, contractors and unions as positive steps to restraining costs in the industry.

The Position of the Contractors

The current year is expected by the sheet metal contractors to be a busy one in the London area, following two years of slackness and a prolonged strike in 1968. More specifically, bids were due in mid-March on a \$1 million sheet metal contract in London. Other important sheet metal bids were due in March and April.

Most of the companies are relatively small, doing business of less than \$1 million annually. They have, moreover, rather limited financial reserves. They voluntarily submitted to the Commission audited financial statements covering several years, and it is clear from these that the firms were not in a good position to contemplate a lengthy work stoppage in 1971.

The contractors were aware that the supply of sheet metal tradesmen in London would likely be inadequate by early summer, necessitating recruiting in other regions which, in some cases, have higher wage scales.

Rumors persisted that construction unions in Ontario were making very high wage demands and the sheet metal contractors believed that a high settlement was inevitable, particularly since London wage rates in the construction trades were known to be lower than in some other major centers in the south western area of the province.

The contractors thought they had succeeded in obtaining adjustments in the union demands which were significant from a timing point of view. They agreed the skills of sheet metal tradesmen have improved in recent years, but there was no indication that a settlement of this size could be offset by productivity improvements.

In the face of this economic situation, it is apparent why the sheet metal firms were not inclined to postpone a decision to settle, even though they had participated in point discussions with contractors in other sectors of the construction industry in London.

The action of the sheet metal contractors in breaking ranks in late February with other groups of construction contractors in London was sharply criticized by the executive of the London and District Construction Association. In defence of their position, the sheet metal contractors referred to a united bargaining front attempted in 1965 in London by the construction industry. This failed when one segment of the general contractors settled independently.

Another attempt was made in 1968, during which the London Sheet Metal Contractors Association took the lead and was struck. The members held out for nine weeks while contractors in other sectors of the industry continued to work in London, and while sheet metal firms in Toronto and other centers hired their sheet metal tradesmen. Having suffered on that occasion, the sheet metal contractors were determined not to be caught out again. Increased wages, moreover, similar to those obtained by the sheet metal workers were received at the time by some of the other trades in the area who had not participated in the strike.

General Comments

Early in 1971, the Ontario Federation of Construction Association, in co-operation with the Provincial Building and Construction Trades Council, took an initiative toward province-wide bargaining. Representatives of both the London sheet metal contractors group and of Local 473 took part in discussions concerning this initiative. Unfortunately plans had not advanced far enough by early February to provide any assurance that bargaining on a province-wide basis in the sheet metal industry would in fact occur early in 1971.

Should bargaining on this broader basis become a reality during the life of the London sheet metal agreement, it is provided that this local agreement, will become null and void.

Province-wide bargaining on a trade basis will, it is expected, help to remove whip-sawing tactics and hence must be recognized as a useful initial step in bringing about more orderly bargaining practices.

The construction industry faces from time to time periods of strong demand pressure. These provide an opportunity for—and are offered as a justification of—sharp increases in wage rates and profit margins. When demand pressures on the industry slacken, the industry is saddled with these high labor costs in attempting to attract more business, to the detriment of construction employment and the solvency of construction firms. In this sense the attempt to take maximum advantage of short-term or local upsurges in demand is an understandable but self-defeating strategy for both sides of the industry itself.

Findings and Conclusions

This examination of the factors leading to the settlement between the London Sheet Metal Contractors Association and Local 473 of the Sheet Metal Workers'

International Association reveals little evidence that consideration of the broader public interest played any part in their collective bargaining.

Both parties were clearly aware that the settlement reached was likely to have direct consequences for other settlements in the construction industry in the London area and throughout the province this spring. They recognized that in all probability these cost increases would be passed on to the industry's customers, but they did not express any great concern about implications of higher construction costs for prices and employment generally.

It is clear that if settlements of this magnitude were to occur in other bargaining situations in Ontario over the coming weeks, they would lead inevitably to still higher costs in the industry and might spill over to other industries and other sections of the country. A further round of substantial cost increases originating in high construction wage settlements will have to be paid for by the rest of the community, either in the form of higher prices or in the form of reduced activity and employment in industries unable to pass these higher costs along to their customers.

Employer associations and unions in various sectors of the construction industry in Ontario have been endeavoring, as indicated above, to develop a more rational bargaining system. Time, however, is running out. The present deficiencies in the system are threatening to inflict further serious damage on the economy as a whole at a time when unemployment is already high and when a renewed worsening of inflation would greatly complicate efforts to expand job opportunities.

In the Commission's view there are only two alternatives if this threat is to be averted. The construction associations and unions must take immediate and decisive action to bring increases in incomes in the industry more in line with what the economy can support. Failing such action, governments will have to find a prompt and effective way of intervening to ensure that the public interest is protected.

APPENDIX E

THE COLLECTION AND ANALYSIS OF INFORMATION ON FUTURE CONSTRUCTION ACTIVITY¹

Part I: *Background and Additional Data Requirements*

Over the past year the Prices and Incomes Commission has examined ways in which the construction industry has been subject to, and has itself influenced, inflation. This has been done through reviewing many of the complex problems currently facing construction, important developments in the industry over the years, and changing relations with other sectors of the economy, and through extensive discussions with construction contractors, buildings trades union leaders, clients of the industry and provincial and federal government officials.

As a result of this examination the uneven flow of construction activities from year to year and season to season has been singled out as a major factor contributing to rising costs in the industry and in the country generally. Action to bring about a more balanced volume of construction activity from year to year and from season to season has been strongly urged by contractors and unions as an important step to achieving more stability in construction and in the economy and to restraining cost increases. There has emerged, moreover, a broad consensus among all groups concerned that carefully planned, co-ordinated and determined efforts are required to reduce the continuing pattern of wide fluctuations in

¹Prepared for an Interdepartmental Working Party on the Measurement of Current and Planned Construction and approved by this Working Party in May, 1971. The members of this Interdepartmental Working Party, established following approval in principle by the Federal and Provincial Ministers of Finance in December, 1970, were Don A. Traquair, Statistics Canada, Jim H. Latimer, Department of Industry, Trade and Commerce, B. Allen Keys, Economic Council of Canada, Frank H. Leacy, Department of Finance, Edgar A. Radburn, Department of the Treasury Board and Felix Quinet and George V. Haythorne of the Prices and Incomes Commission, who served as Secretary and Chairman, respectively.

construction activity.² Other steps to restrain cost increases on the part of contractors, unions, clients and governments have been identified and action required on these is also now under discussion³.

Need for Assembling Information on Projected Construction Activities

Basic to achieving a smoother flow of construction activities is the collection of information in a systematic and co-ordinated manner on planned construction undertakings. Such information needs to be assembled far enough in advance to enable adjustments in timing to be made in given areas where these adjustments will contribute to easing excess pressures on the one hand or to offsetting slackness in construction activity on the other.

At the present time the extent of advance planning even on major construction projects varies widely. This is a factor to be considered in determining what would be a reasonable time period in assembling and in releasing data on projected construction activity.

Other factors to be considered are the categories of construction to be covered, protection of information supplied on a confidential basis and the areas for which the data should be assembled and presented. It would simplify the task of assembling information and protect its confidential nature to use broad construction categories only. These initially might be restricted to four, namely; residential building, non-residential building, highway and other transport, and other engineering structures.

For similar reasons the information in each of these categories could be assembled for areas of the country which form logical geographic units within which it would be reasonable to seek to level out construction activity. These units should not be too large to pose difficult problems of mobility for contractors or workers nor should they be too small to make it impossible to work out realistic adjustments within them to achieve a reasonable flow of construction activity. In some cases metropolitan areas would be large enough to be treated as separate geographical units whereas in others it might be more appropriate to include them in a larger region⁴

²Year-to-year changes in the total estimated value of construction activities in Canada as a whole reveal sharp cyclical fluctuations over the past three decades. Pronounced peaks and valleys also occur when similar data are charted for each province over the past 10 years. See chapter two above.

³A statement entitled "Action to Restrain Rising Costs in the Construction Industry", approved by the Joint National Policy Committee of the Plumbing and Pipefitting Industry in Canada in November, 1970, is being discussed by contractors and unions within this and other sectors of the construction industry. See Appendix C.

⁴Initially, the information on projected construction activity might be presented for some 25 to 30 separate areas, for example; Labrador, Remainder of Newfoundland; Prince Edward Island, Metropolitan Halifax, Remainder of Nova Scotia; Metropolitan Saint John, Remainder of New Brunswick; Metropolitan Montreal, Metropolitan Quebec, Remainder of Quebec south of St. Lawrence, Remainder of Quebec north of St. Lawrence; Metropolitan Toronto, Hamilton and Niagara, Oshawa and Georgian Bay, Remainder of Southwestern Ontario; Eastern Ontario; North Central Ontario; North-western Ontario; Metropolitan Winnipeg, Remainder of Manitoba; Saskatchewan; Metropolitan Edmonton, Metropolitan Calgary, Remainder of Alberta; Metropolitan Vancouver, Vancouver Island, Remainder of Southern British Columbia, Northern British Columbia; Yukon and Northwest Territories. In some cases additional areas may be desirable depending on divisions already established or other factors. In any event, the areas would need to be flexible in case changes are required after experience has been gained under the program.

Sources of Data on Future Construction Activity

Information on projected construction activities can be obtained from two broad sources. These are, first surveys of construction activity in progress, and second, surveys of major projects that are planned but which have not yet been commenced. The main surveys presently conducted of construction activities in Canada are set forth in Part II below.

From the first set of surveys, projections can be made with reasonable reliability of a substantial portion of the probable volume of work at any time in a given area. Most of the data needed for these projections covering the broad categories and areas indicated above can be developed by Statistics Canada through the refinement and greater co-ordination of information now obtained through existing surveys. In a few instances some additional data may be required.

Information on major planned projects would be required on a uniform and continuous basis from all levels of government and other principal public and private clients of the industry. Some data on advance investment intentions have been collected by federal public agencies as is noted in Part II. A broader coverage is needed to provide data for the four construction categories and for the principal geographic areas. As far as possible these data should be assembled through existing surveys so as to keep to a minimum any extra efforts on the part of respondents.

It would thus be possible, based on these two sources of information, to present reasonably complete estimates of expected construction activity over a period, say of 18 months to two years. By continuing the projections on the basis of current information and developing and maintaining as necessary contact with the principal public and private clients of industry, the estimates of expected activity might be revised at regular quarterly or other intervals. The estimates of expected public construction would likely be fairly complete. Particular care and skill would be required to ensure that the information assembled on major planned private projects not yet commenced was as completed as possible.

In the case of major future projects it would be helpful to obtain estimates of on-site and off-site labor costs as well as estimates of total construction and total project costs. Where available, such estimates could be set forth on a quarterly basis during the anticipated construction period. Based on generally accepted conversion tables, the estimated cost data could be expressed in anticipated manpower requirements for each of the broad construction categories and for each area.

Even though not used in estimating future construction activity over a period of 18 months to two years, information on projects to begin beyond a period of two years should be assembled wherever available. Such information could be checked as it becomes appropriate for later use. It would also assist in assessing the extent and degree of reliability of advance planning as well as serve as an encouragement to longer-range planning wherever this were feasible.

Use of Estimates of Expected Construction Activity

The estimates of expected construction activity, as they become available, would serve to indicate the likely future patterns of construction activity in the four main categories and in each of the principal areas of the country. These estimates, the

reliability of which might be expected to improve over time, would be of interest to all governments, to all clients of the construction industry, to residential, institutional, commercial and industrial contractors, to unions and to the public generally.

In the case particularly of governments and of major clients the estimates would enable adjustments in the timing and in the volume of construction activity to be made where these would result in a more even flow of construction work and were acceptable also on other grounds.

The confidential nature of information covering planned projects would, of course, have to be protected. This could be achieved by ensuring such information would be used only along with other data in aggregate analyses of future construction activity. The results of these analyses by broad construction categories and by areas would be of particular interest to those responsible for decisions concerning the nature, size, location and timing of construction undertakings.

The availability of these analyses of projected construction would not mean that needed adjustments in timing or volume would automatically or necessarily occur. Their presence, however, would alert those in a position to make changes to do so when it becomes clear that such action on their part would serve, along with steps taken by contractors and unions directly associated with the construction industry, to achieve a more even season to season.

Part II: *Construction Activity in Canada – Current Surveys*

A. *Statistics Canada*

1. Building Permits (Monthly)

(i) Scope of Survey:

Information is assembled by Statistics Canada on all residential and non-residential building permits issued each month by some 1,400 municipalities.

The basic data cover the numbers of single dwellings, double dwellings, apartments and conversions and the total values of new residential; repairs to residential; industrial, commercial, and institutional and government building.

(ii) Publication of Data:

The data are published in a monthly bulletin, *Building Permits*, now in its fifteenth year, usually within 10 weeks of the end of the month covered. An annual summary under the same title is also published. In each case the data are shown by municipality, by metropolitan area, by province and, in Quebec, Ontario and Manitoba, by other major economic regions within the province.

2. Capital and Repair Expenditures (Annual)

(i) Scope of Survey:

This survey, carried out by Statistics Canada in co-operation with the Department of Industry, Trade and Commerce covers some 24,000 establishments.

The survey covers (a) anticipated expenditures on both construction and machinery and equipment during the coming calendar year; (b) preliminary estimates of these expenditures during the current year; and (c) final figures of the actual expenditures during the previous year.

(ii) Publication of Data:

The results are analyzed and published in an outlook report entitled *Private and Public Investment in Canada*, issued in March or April. Industrial breakdowns are given for each province and for Canada with data for manufacturing for each metropolitan area and some additional industrial information for Montreal, Toronto and Vancouver.

Based on this same source, more detailed data on construction by type of structure are published in an annual report released in May and entitled *Construction in Canada*.

During June mid-year review is undertaken of the same 24,000 establishments to determine the extent of any changes that have occurred in the expenditure patterns during the current year. The results of this mid-year review are published late in the summer in an outlook report entitled *Private and Public Investment in Canada Mid-Year Review*, with the same detail as given in the initial outlook report, *Private and Public Investment in Canada*, issued earlier in the year.

3. Capital Expenditures (Quarterly)

(i) Scope of Survey:

Another survey was begun by Statistics Canada a year ago of actual and anticipated capital expenditures on a quarterly basis on construction and machinery and equipment for non-residential building and engineering projects. Approximately 450 of the larger firms in the country are covered by this survey. The information covers the present and past quarters and the two future quarters.

For example, the quarterly survey in the first quarter of 1971 covers final expenditure data for the fourth quarter of 1970, preliminary expenditure data for the first quarter of 1971, a first forecast for the third quarter of 1971 and a second forecast for the second quarter of 1971. The information is analyzed on a national, provincial and broad industry basis.

(ii) Publication of Data:

No information from this summary has yet been published.

B. *Departmental of Industry, Trade and Commerce*

1. Capital Investment Intentions (Annual) — Preliminary Survey

(i) Scope of Survey:

An interview survey of some 200 large establishments including some government agencies at the provincial level has been conducted each October by the Department of Industry, Trade and Commerce since the early 1950s. Information is requested concerning investment in

construction and machinery and equipment for the next 12-18 months, for Canada and by regions. Preliminary estimates of these investment expenditures are also secured for the current year.

(ii) Publication of Data:

The results of the above survey are for internal use only. However, since 1968, the Department of Industry, Trade and Commerce has issued a press release in early November covering the preliminary estimates of investment realizations for the current year, and investment intentions during the coming year, for the firms surveyed, as well as the highlights of qualitative results on such items as costs and business outlook.

2. Capital Investment Intentions (Annual – Supplementary Survey)

(i) Scope of Survey:

Since 1966-67, the Department of Industry Trade and Commerce has also conducted in March/April a Supplementary Survey in which the 200 firms contacted in October are re-interviewed concerning changes in investment data as reported in October.

(ii) Publication of Data:

The results – available by the end of April – are for internal use only.

3. Capital and Repair Expenditures (Annual)

(i) Scope of Survey:

Within the framework of the Capital and Repair Expenditures Survey discussed under A.2, the Department of Industry, Trade and Commerce collects in January and June new capital expenditures and repair outlays of federal departments and by province of installation.

In addition, the Department of Industry, Trade and Commerce prepares miscellaneous estimates of capital investment, e.g. in agriculture.

(ii) Publication of Data:

These data are included in: *Private and Public Investment in Canada; Construction in Canada;* and *Private and Public Investment in Canada Mid-Year Review.*

C. Economic Council of Canada and Department of Industry Trade and Commerce

1. Capital Investment Intentions (Annual) – Preliminary Survey

(i) Scope of Survey:

Since 1968, the Economic Council of Canada has participated in the Preliminary Survey, (see A.1 (i)) and on behalf of the Council investment intentions for five years ahead are collected as well (in addition to specific qualitative and quantitative background information such as estimates of adjustment for expected price changes).

(ii) Publication of Data:

The Economic Council of Canada publishes the information assembled on investment outlays for construction and machinery for the current year and intentions for the subsequent five years for Canada and the

provinces at various level of detail; these data appear in *Medium-Term Capital Investment Survey* (issued in January or early February).

D. *Canadata (Southam Business Publications)*

1. Contracts Awarded (Monthly)

(i) Scope of Survey:

Data covering contracts awarded are issued each month by Canadata, a division of the Southam Business Publications, Toronto. This information, made available in detail to those purchasing this service, is derived from a coast-to-coast daily reporting service which covers details of all stages of construction from the time a project is contemplated until work is ready to begin.

(ii) Publication of Data:

The information is summarized in a publication entitled, *Southam Building Reports*, issued monthly in Toronto.

APPENDIX F

ACTION TO BRING ABOUT GREATER EMPLOYMENT STABILITY IN THE CONSTRUCTION INDUSTRY¹

Introduction

Most of the toughest problems in the construction industry can be traced to the wide fluctuations in the volume of activity from year to year and from season to season. These fluctuations result in intermittent employment, frequent changes in employers, a low degree of loyalty between employee and employer, high costs, numerous bankruptcies, at times windfall profits and all too often, inflationary pressures in the economy. Instability of construction operations, moreover, produces many uncertainties and with them emotional strains for both workers and contractors. It tends to foster demands for overtime, manpower hoarding and lay-offs, stock-piling of materials, equipment, land and other property leading to the under or overuse of human and of other resources. Productivity under these conditions suffers and inevitably construction costs increase.

Much can be done to level out construction operations and employment, but past experience indicates that little will be accomplished short of deliberate and joint action by those most directly concerned. Steps to rectify the situation, moreover, are more likely to be taken when there is a clear financial incentive to do so. Besides it seems only fair that those who contribute to the economic waste and human suffering of the present methods should be held responsible for their actions instead of the resulting burdens being borne by many unable to withstand them and by the general public.

¹ These proposals grow out of numerous discussions with contractors, union leaders, professional engineers, architects, clients, public officials and others closely associated with the construction industry and inquiries undertaken by the author when serving as Commissioner of the Prices and Incomes Commission from 1969 to 1972.

Data on Employment Security

While insecurity of employment has always been a hard fact of life for most construction workers, there has not been, until recently, any satisfactory information in Canada on the average length of employment per year of those in the building trades. With the development of pensions and other social programs, this gap is now being filled. As a result, there are available, today for the first time, comprehensive estimates of the average number of weeks of employment and average weekly and annual earnings of all major groups of workers covered by unemployment insurance in the construction industry in 1966 and again in 1968. These estimates derived from an Unemployment Insurance-National Revenue sample survey reveal in a striking fashion, the relative positions in which various groups of construction workers across Canada find themselves with respect to average weeks of employment per year and to average weekly and annual earnings.²

The inescapable conclusion from an analysis of these duration of employment estimates is that large numbers of those associated with the construction industry face serious problems of instability each year. The effects of this widespread instability are reflected also in the associated annual earnings data as will be seen in Table A-2 especially in the case of those who work for less than 45 weeks per year.³ Unemployment Insurance benefits have helped but there is still some distance to go to close the earnings gap for those involved. Assuming, for example, those who worked on the average between 33 and 44 weeks per year in Period III were able on average, to draw benefits in 1968 for 12 weeks to bring them up to the average of 50 weeks applying to those in Period IV who worked in that year 45 weeks or more, and assuming an average benefit of \$50 per week, this would add only \$600 to their annual earnings. They would still have received on average \$1,100 per year less than those in Period IV. Similarly, if those in Period II received benefits of \$50 a week for 24 weeks, this would add only \$1,200, leaving them on average over \$2,100 behind those in Period IV. Thus it is apparent that even with unemployment insurance, workers in the construction industry with less than full employment are in a much inferior earnings position to those who have 45 weeks or more of employment per year.⁴

These annual estimated reveal also, as one would expect, wide variations between trades and regions, in both annual employment and annual earnings. They also make more apparent that those who already have relatively high average weeks and hours of work per year benefit substantially more from wage rate increases than those who work for shorter period each year. This is the case even though employment instability is frequently said to be the principal justification for relatively high wage rate increases for construction workers.

² For a description of the sample survey and interpretation of the data see chapter three above.

³ Figures and tables, similar to those in chapters three and four, setting forth the estimates of annual employment and earnings of workers covered by Unemployment Insurance for Canada and each of the five regions were included in the original draft of this paper.

⁴ Improvements in unemployment insurance benefits were introduced in 1971. Those with year round employment, however, have also gained more as a result of higher wage rate increases during the years since 1968. It might be said why not increase unemployment insurance benefits still more. Such an approach while helping to provide greater income security does nothing to remove the basic problem of instability from year to year and season to season. Beside it attacks the problem essentially in a negative rather than in a positive manner. Moreover, most workers prefer employment to be directly associated with their income.

TABLE A.2
Estimated Average Weeks of Employment and Annual Earnings
of Construction Workers, Canada, 1968.

Yearly Work Period — Weeks		Estimated Employees			Average Annual Earnings \$
		Number	Percentage of Total	Average Weeks of Employment	
I	1-20	67,000	18	12	2,400
II	21-32	63,000	17	27	3,700
III	33-44	86,000	24	39	5,200
IV	45-52	146,000	41	50	7,000
TOTAL		362,000	100	36	5,200

Source: Unemployment Insurance-National Revenue Data Base.

Action Required

Carefully planned and broadly based action appears to be essential if greater equity of employment and earnings among those in the industry and greater stability of construction activity generally are to be achieved. The scheduling of major construction projects on a co-ordinated, area basis is a primary requirement of an overall stability program. Steps needed in this regard have been outlined elsewhere.⁵ The introduction of an employment security program developed jointly by the parties directly concerned could become another key element in the action required.

Joint Approach to Common Problems

Some progress fortunately has been made in developing communications and better understanding of the roles of workers, employers, clients and governments in the construction industry in most parts of the country over recent years. This is to be seen in steps taken by unions and contractors to develop province wide, regional and national bargaining and a joint approach to other common problems facing employers and workers.⁶ It is to be seen in the creation of Owner-Client Councils and also in action taken by governments, particularly through their Departments of Labour, in assisting where required in the resolution of industrial disputes and in tackling positively matters of concern to both workers and contractors such as safety and working conditions.

In Ontario and Nova Scotia formal public inquiries have been undertaken by the government into labor relations⁷ and in Quebec a tripartite Construction Industry

⁵ See Appendix E.

⁶ See, for example, Appendixes A and C.

⁷ Cf. *Report of the Royal Commission on Labor Management Relations in the Construction Industry*, H. Carl Goldenberg, Province of Ontario, Toronto, 1962, and *Report of the Commission of Enquiry into Industrial Relations in the Nova Scotia Construction Industry*, H. D. Woods, Commissioner, September, 1970.

Commission has been established recently.⁸ Less formal tripartite committees have functioned in the construction industry in a number of provinces notably, Saskatchewan⁹, Prince Edward Island¹⁰ and Ontario¹¹ and also in Canada as a whole.¹² Earlier, for many years between World War I and World War II the National Joint Conference Board of the Construction Industry operated as an advisory body to the industry under the aegis of Canada Department of Labour¹³. Some interest has been expressed during recent years in re-establishing a tripartite national body along somewhat similar lines¹⁴. In 1970 the Construction Industry Development Council was created as an advisory body to the Minister of Industry, Trade and Commerce¹⁵.

There have clearly been increasing instances over recent years of joint action involving particularly employers, unions and governments on a provincial and a national basis in dealing with common issues confronting the construction industry. In view of this and with the greater knowledge now available of the nature and consequences of construction fluctuations, it may prove possible before long to work out a joint attack on instability. This has long been regarded by many as the basic problem of the industry but equally everyone has felt powerless to do much about it. Furthermore it is clear that little will be achieved unless each of the principal groups involved namely contractors, unions, clients and governments are prepared to take some bold and far-sighted measures on the one hand and to set aside some outworn, traditional practices and attitudes on the other.

There will be those who will continue to see little chance of coping effectively with instability in construction operations and who will counsel against any head

⁸Appointed under authority of Order in Council 4119 of November 4, 1970, this Commission is currently composed of 15 members, three representatives, including the Chairman of the provincial Department of Labor and Manpower, six representatives of the employers and six representatives of the Unions. Its principal function is to operate quantitative manpower controls including the issuance of construction work permits.

⁹A Committee chaired by a former Deputy Minister of Labour, was established in 1968 to examine training requirements and related matters of special concern to workers and employers in construction.

¹⁰A provincial union-contractor committee to explore common problems facing the industry was convened late in 1971 by the provincial Department of Labour.

¹¹The Minister of Labour in Ontario announced on November 4th, 1972 an Industry Review Panel composed of four union members, four employers and a former Deputy Minister of Labour as Chairman.

¹²A tripartite Committee on construction manpower training was appointed in 1965 composed of union and employer representatives and chaired by the Deputy Minister of the Canada Department of Labor. This Committee ceased to function after responsibility for training was transferred to the new Department of Manpower and Immigration in 1966.

¹³Established in 1920; cf. Annual Report of the Canada Department of Labour, Ottawa, p. 51, 1943. This Board ceased to function after World War II partly due to a disagreement concerning representation from nationally organized unions in Canada.

¹⁴This interest was expressed by the executive of the "Roadmen's" association in Canada in 1964 and 1965. The members of this group of international unions were prepared to have representation on the national body from the Confederation of National Trade Unions as well as from international unions. The Canadian Construction Association preferred at the time not to participate in such a body.

¹⁵This agency, comprising some 25 to 30 representatives from the building supply industry, architects, professional engineers, universities, construction contractors, building trade unions, and government departments, encourages joint industry, university-government action in dealing with technical and other problems facing the construction and related sectors of the economy.

on approach. Some of the more cautious among both employers and workers will say leave it alone lest it infringe on our freedom of action, or lead to an unwarranted degree of government or public involvement in our affairs. Alternatively they may say governments should collectively solve the problem by planning and carrying out their own construction programs more systematically and by taking steps to see that private clients do so too. Undoubtedly governments could achieve more along these lines than has yet been accomplished¹⁶. Governments are, however, much more likely to act along these and related lines if they see that contractors, building unions and other clients of the industry are also ready to take decisive steps in an overall joint program.

Some contractors may also say that we need to know more about the benefits from any joint program even though we recognize instability as our root industrial problem and that little can be achieved in dealing with it alone. This is a reasonable observation. Clearly the prospects of improved efficiency, higher productivity, lower cost and a more positive relationship between workers and employers need to be fully discussed and sharply defined.

Similarly some union members may ask what are the current practices that can be safely set aside and how will such a joint program affect the role of the hiring halls and of collective bargaining? These too are fair questions which need full and frank discussion in the light of the whole program and the benefits to be gained from it.

Equally some clients may ask why should we be involved in the program? The answer is that construction is essentially a service industry and unless those who demand its services are prepared to consider altering the timing and nature of their demands, the industry will continue to face serious uncertainties and ups and downs in activity, and inevitably the economy as a whole will go on suffering from them.

Finally some governments may say we must retain our freedom to increase or decrease our expenditures on construction as best serves our political interests. The answer to this is that they will no doubt continue to act in this manner until what is at stake in making such expenditure decisions is more fully and widely understood. When it is realized that serious adverse economic and social consequences result from a failure to plan construction projects in a co-ordinated fashion, governments will be faced with the necessity to choose between continuing to tolerate these adverse consequences with potential explosive political effects and a decision to act with broader and longer sighted social, as well as economic and political, interests in mind.

Because of the continuing severity of the problem of instability in the construction industry in Canada and the fact that it has become so deep seated and entrenched in the functioning of the whole economy, nothing short of bold action by all groups involved, will bring it under control. This is now being realized by an increasing number of people closely associated with the industry. To help stimulate further explorations of joint action in this critically important area some tentative

¹⁶ A form of regional planning for the construction industry has been recommended in Britain. In Sweden a system of regional control of building activity has been in effect for some years under the National Labor Market Board, Cf. *Report of the Committee of Inquiry under Professor E. H. Phelps Brown into Certain Matters concerning Labour in Building and Civil Engineering* Cmd. 3714, Her Majesty's Stationery Office, London, England.

proposals for an employment security program have been developed. Equally the proposals could be based on the corresponding provincial or regional estimates should it be decided to explore the possibility of introducing an employment security program,¹⁷ on a more limited area basis, at least initially.

Employment Security Program

An outline of a possible employment security program is sketched out below. It is hoped this may prove provocative and lead to improvements in it or to alternatives which will better serve the overall objective of achieving greater stability in construction and in the Canadian economy as a whole. Obviously it is neither possible or desirable to cover all aspects of such a program in this outline. Many can only be determined through joint discussion and agreement by the parties concerned. Thus only some of the principal features are set forth here. These are built around the estimates of average annual employment in the construction industry worked out for Canada as a whole.

The broad objective of an employment security program to achieve a reasonable minimum level of annual employment for all those with a permanent and principal attachment to the construction industry. With this in mind a level of 45 weeks, 10.5 months or 1800 hours might be set as an initial annual employment target for most of those who would be covered under the program. Since it would not likely prove practical to set 45 weeks or the equivalents in months or hours as an immediate annual guarantee for all regular construction workers, two levels of guarantee might be introduced at the start of the program. Regular workers for this purpose might be defined as those who had established an attachment to the industry through 21 weeks or more during the previous year. Thus, no guarantee would be contemplated for anyone who had not worked for at least 21 weeks in the construction industry during the previous year. Those who had an employment record during the previous year of 21 to 32 weeks might be given an employment guarantee of 33 weeks, while those with a record of 33 weeks or over might be given a higher employment guarantee of 45 weeks. This would mean those covered by the lower guarantee initially would be able to move to the higher guarantee as soon as their previous year's employment reached 33 weeks. There would also be an opportunity for those not entitled to a guarantee initially to move into either the lower or higher level as soon as they were able to raise their annual employment record up to the level required. Alternative lengths of required previous annual employment might of course be chosen and equally other guarantees or a single lower guarantee of perhaps 40 weeks might be established initially.

The previous employment experience figures and the proposed guarantees have each been worked out on an annual basis. In practice, it might be preferable after one or two years of experience were gained under the program to apply these minimum experience records and guarantees on a quarterly basis. This would keep

¹⁷ In the preliminary draft of this paper dated July 12, 1972, the employment and other 1968 estimates for Quebec were used for illustrative purposes; although the basic 1966 and 1968 employment charts for both years were included for all five major regions and for Canada as a whole.

the program on a more current basis and thus, encourage adjustments to achieve the employment guarantees to be made whenever feasible as early as possible. Moreover, using a moving annual employment experience base, covering the immediately four preceding quarters, would serve to reduce the impact of erratic movements in any single quarter.

The proposed employment guarantees and the related previous work experience under an employment security program might be summarized as follows:

1. 45 Week Employment Guarantee:

Those falling in Periods III and IV in Table A-2 who had worked for 33 weeks or more during the immediately preceding full year of four quarters in the construction industry might be assured 45 weeks employment during the ensuing year.

2. 33 Week Employment Guarantee:

Those falling in Period II who had worked from 21 to 32 weeks during the immediately preceding full year of four quarters in the construction industry would be assured 33 weeks employment during the ensuing year.

Other Features

After the program has been in operation for a year or two, or alternatively from the beginning, the 33 and 45 week guarantee might be broken down on a quarterly basis with nine and 12 weeks of employment respectively guaranteed during the first and fourth quarters of each year and 7.5 and 10.5 weeks respectively during the second and third quarters. These four quarterly guarantees it will be noted, are the equivalent of 33 weeks and 45 weeks per year. The higher guarantee suggested for the winter months is in recognition of the greater difficulty usually experienced in securing employment at this time of the year, and of the need to level out as far as practical, construction operations throughout the year.

To encourage employment, where required in more distant areas and in recognition of higher expenses usually involved in such situations, workers otherwise qualifying for quarterly employment guarantees might be entitled to one addition week per quarter, provided all work during that quarter was performed outside of their regular home area. The maxima per year in this case would thus be increased to 37 and 49 weeks or to 1295 and 1715 regular hours respectively.¹⁸ An alternative method of encouraging such employment would be to reduce the minimum levels of previous employment required by an appropriate amount provided all employment during the subsequent quarter or quarters were outside the regular home area of the workers involved.

The minimum levels of previous annual employment might remain constant for a full year, or they could be changed each quarter, that is based on the previous four quarters. The former would reduce the administrative work involved and would generally simplify the program.

At the beginning of the program it might be provided that 35 hours, or some other agreed figure would constitute a guaranteed week rather than 40 hours. This

¹⁸Based on a minimum guarantee of 35 hours per week.

would be the equivalent in annual terms of 1135 hours under the 33 week guarantee and 1575 hours under the 45 week guarantee. These levels might be raised later if this proved practical under the program.

It could be assumed that most of those now working 45 weeks or more, that is the 146,000 estimated in Period IV for Canada as a whole, would continue to do so under such an employment security program. This would mean that the 45 weeks of guaranteed employment would apply principally to those in Period III. On the basis of these 1968 estimates, the number likely to be directly affected by the 45 week guarantee during the initial year of the program would not likely exceed 100,000. This allows for one additional week per quarter for those working outside of their home areas on the one hand and for the possible exclusion of some workers, notably non-site clerical workers, from the program. Similarly during the first year the maximum number, again based on the 1968 estimates, eligible for the 33 week guarantee would not likely exceed 55,000. After the first year it could be assumed that many of these 75,000 would now become eligible for the higher 45 week guarantee and that a substantial number in Period I would have moved into Period II and hence would be eligible for the 33 week guarantee. Assuming some success to be achieved by the industry and by its clients in levelling out construction employment from year to year under the program most of the 100,000 initially in Period III would have joined those in Period IV, although inevitably some in a higher Period one year would slip back into a lower Period another year.

The numbers falling in each of the Periods I to IV as suggested would likely change significantly after an employment security program was introduced. One might expect those in Period IV to increase most, due both to the direct effect of the employment guarantees and to accompanying action to increase stability in construction activity generally. Those moving into Period IV from Period III would in turn be replaced by a substantial shift from Period II to Period III. The relative numbers in Periods II and I could be expected to decline correspondingly, or at least to do so after the program had been in operation for a few years.

The coverage of the program might be limited to specified occupational or other categories of workers in the construction industry. At the beginning these could include all building tradesmen, laborers, on-site office staff and general foremen. All firms and establishments might be included regardless of size or again, partly to reduce administrative work, at least at the beginning, the quantities might be limited to employees of firms or establishments with a monthly payroll of \$10,000 or over, or a quarterly payroll of \$30,000 and over. The previous employment experience might, however, be honored regardless of the size or location of the firm provided the employment had been in the construction industry.

Casual and part-time employees it might be provided would not be entitled to any benefits under the program until they had worked in the construction industry for a minimum of 21 weeks, of say not less than 20 regular hours each, over the immediately preceding four quarters and of which at least five weeks, of not less than 20 regular hours each, had been within the immediately preceding quarter.

In order to discourage overtime work where not essential, and thus serve as a further encouragement to increased employment stability for more workers, it

might be provided that overtime hours would not be counted either in establishing the minimum previous employment experience or the quarterly or annual guarantees of employed weeks and hours.

It would be necessary to maintain in some form a record of all those employed in the construction industry. This might take the form of an annual register on a specified date in all parts of the country. The register might include name, social insurance number, address, occupation and firm, location of employment, wage rate or salary. The register would cover all firms and establishments regardless of size and all occupational groups, whether covered under the annual employment security program or not.

Each firm or establishment in the construction industry, whether coming directly under the employment security program or not, might be required to maintain, on a standard computer or other suitable card, a record of each employee's work experience. This record might show separately regular hours and any overtime hours worked each day and weekly and quarterly totals of each. A copy of this card could be given to employees when they changed firms, or establishments so that they could be turned over immediately to new firms. Employers would be expected also to make these cards and other related records available as required for inspection and checking.

Should the program be introduced in the first instance in a single province or region of Canada an employee who moved out of that province or region into another might be held responsible for maintaining a full record of his employment in that province or region should he decide within the year to return to the original province or region. Similarly workers from other areas moving into a province or region with an employment security program might be covered under the program in the same way as those regularly working there provided they were able to furnish satisfactory evidence of their previous employment experience. In this way an employment security program would not serve as a discouragement to manpower mobility.

Should it be decided to exclude small sized firms from coverage under the employment security program, employees of such firms might still be eligible for employment guarantees should they move to larger firms or establishments. A record of the previous employment experience of all employees would however be required to establish their eligibility for employment guarantees.

Weeks and hours of training on the job, or related classroom training paid for wholly or partially by the firm under a joint union-management plan or under a wholly or partially government supported plan might be counted as employment experience and also for employment guarantees in the same way as regular hours of work.

Apprentices named in accordance with joint firm, union, government agreements covering each occupational group under the employment security program, bearing in mind agreed retirement provisions, expectations covering volume of construction and availability of experienced workers from elsewhere, might be covered each year. All such apprentices might be guaranteed employment on the higher level set out above, including training both on and off the job. This would likely mean waving the usual provisions for previous employment experience in some cases.

It would seem preferable to provide under the program that regular hours of work would not include any time not actually worked except in the case of any statutory holiday with pay and paid annual vacation periods. Such paid holiday and vacation periods, as in the case of training with pay, would thus be counted towards both previous employment experience and guaranteed employment. The actual periods of vacation could be taken at one time or distributed among two or more quarters and calculated on the basis of one week or not less than 35 hours of such vacation being the equivalent of one week of employment experience and one week or guaranteed employment.

The Canada Manpower Centers, provincial employment offices, where they exist, union hiring halls, and construction firms would be expected to co-ordinate their labor market services including information on manpower resources, actual and prospective employment vacancies, job applicants and training programs. Firms and individual workers would, moreover, utilize these services as required in accordance with procedures worked out jointly, agreed upon and reviewed from time to time by the contractors' associations, unions and government agencies concerned.

Employment Stability Fund

An essential part of an employment security program would appear to be an employment stability fund established for the construction industry as a whole. Such a fund would provide the equivalent of hourly earnings to those employees in the construction industry for any hours during each quarter they failed to receive work, on the job training, related classroom training with pay, or more general training or retraining with pay or vacation with pay sufficient to meet their employment guarantees. The fund would in other words serve as an essential back-up provision when employment opportunities were not available. It would be regarded, however, as a secondary rather than a primary part of the program since the main emphasis would be on providing employment stability through more advanced and co-ordinated planning of construction operations.

Contributions to the fund might in the first instance be from two principal sources: all construction firms with a gross payroll in excess of \$10,000 per month for those employees covered under the employment security program; all private and public clients of the industry with building or other projects on which construction services supplied cost \$50,000 or more. In the case of contributions from construction firms the amount might be shared equally by the employers and the workers involved on the grounds that both would benefit from increased stability in construction operations. The contribution from the clients would be made on the grounds that they too would benefit from increased stability in construction operations through lower costs and in other ways.

The principal provisions governing an employment stability fund in the construction industry might be expressed in summary as:

1. Basic Contributions

- (a) Construction Industry:

- Two per cent of gross monthly payroll of each firm in excess of \$10,000 might be paid regularly into the employment stability fund. This amount

might be based on the equivalent of a one percent contribution from the employer and a one percent contribution by the workers. The payroll in this case could cover building tradesmen, laborers, on-site staff members and general foremen, regardless of the number of hours they worked during the month.

(b) Clients of the Industry:

Two per cent of the price paid in excess of \$50,000 for construction services, excluding equipment, machinery and land, on individual new, repair or maintenance, might be contributed in the case of all private and public construction projects.

2. Reduced Contributions

(a) Construction Industry:

A reduced contribution of one per cent of monthly payroll as proposed in 1 (a) above, might be paid when construction firms, after the first full year of the employment security program, provided an average of 45 weeks or more for 90 per cent or more of all building tradesmen, laborers, on-site office staff and general foremen employed by them during the twelve months immediately preceding the current quarterly period. This reduced amount which again might be based on a 0.5 per cent contribution by the employer and the other 0.5 per cent contribution by the workers, would continue to apply during subsequent quarters provided the same test was met; otherwise, the contribution rate would revert to two per cent.

(b) Clients of the Industry:

One per cent of the price paid, as defined in 1(b) above might be contributed when, in co-operation with architects, professional engineers and construction contractors, clients are able to show that continuous employment of not less than 35 regular hours per week has been provided to those members of the occupational groups covered under the employment security program for an average of at least 90 per cent of the working time such jobs are required from the date of on-site commencement to on-site completion, excluding acts of God, legal strikes and legal lockouts.

3. Increased Contributions

(a) Construction Industry:

Four per cent of the actual payroll involved in the case of firms included under 1(a) above might be paid into the fund for any overtime hours worked. The total contributions here again might be made up of equal contributions by employers and workers. The contributions in this case would be in addition to those made under 1(a) or 2(b) above.

(b) Clients of the Industry:

Similarly an increased contribution of four per cent of the price paid to a contractor for all overtime work performed on projects included under 1(b) above might be paid into the fund. The contributions in this case would be in addition to those made under 1(b) or 2(b) above.

Other Features

After the broad outlines of an employment security program were worked out and agreed upon by those directly concerned the essential provisions might be set forth in appropriate legislation. These provisions might include the contributions to be made to the employment stability fund by construction contractors, workers and clients, their dates of commencement, other key features and the establishment of an appropriate agency to administer the employment security program.

Provincial or regional, as well as a national, advisory committee might be named to assist in the operation of the program including the fund. Each committee might be composed of representatives of construction associations, building trade union councils, clients, professional bodies, and governments each on appropriate levels. The general public might also be represented by two or three persons with the chairman named from this group. The secretariat could be drawn from the administrative agency.

Construction workers who became eligible to draw payments from the employment stability fund, in the event that employment training or paid vacation could not be provided up to the full limit of that guaranteed, and who were also qualified for benefits under the existing Unemployment Insurance Program, could decide whether to claim these latter benefits. If they did so, these benefits would have to be deducted from those payments for which they were eligible under the employment stability fund. On the other hand, should such workers decide not to claim their benefits under the Unemployment Insurance Program, the position of the construction industry would likely to that extent be improved under the proposed new merit rating provisions. It is possible also that employees, by withholding the receipt of benefits under the Unemployment Insurance Program to which they are entitled today, might improve their position tomorrow, should they become unemployed for a longer period of time later. In any event, there would continue to be workers in the construction industry whose previous employment experience was insufficient to obtain employment guarantees or whose employment guarantees had become exhausted, who would be qualified to receive benefits under the Unemployment Insurance Program.

Total Annual Contributions and Payments

In view of the many uncertainties and unknowns involved, it is not possible at this stage to make reliable estimates of the total annual contributions that might be made into such an employment stability fund or of the total annual payments that might be made out of it. When broad outlines are determined some calculations of the likely revenues and outlays might then be worked out. In any event a minimum total level of contributions might be stipulated before any payments would be made and also a minimum figure below which the fund would not be allowed to fall at any time.

Concluding Observations

It would be important in introducing an employment security program to place the principal emphasis as already noted on reducing fluctuations in construction

operations. In keeping with this basic emphasis, built-in financial incentives might be included as suggested to encourage clients of the industry to time and schedule their construction projects to help bring about a maximum degree of stability in the industry. Equally penalties it is proposed might be included to discourage action which would tend to defeat this objective.

Incentives and penalties are also included to promote similar action by the construction industry itself, on which responsibility must rest for carefully planning and scheduling work on individual projects, for eliminating overtime except in emergency or highly special situations, and for generally levelling out manpower utilization from year to year and season to season.

Construction tradesmen and their unions, as well as construction contractors, have an important role to play in achieving maximum employment stability for everyone associated with the industry. This includes not only a willingness but a determination to remove practices, which were deemed necessary in the past to protect against work or job instability, but which, under an employment security program, would not only no longer be required but which would only continue to add to construction costs. Unions on their part could also assist through the efficient referral of members to available job openings, close co-operation with government manpower placement and training agencies, stimulating increased winter employment, encouraging mobility where required, discouraging overtime, and in other ways.

Canada Manpower Centers and federal and provincial Departments of Labor would be in a position to aid in attaining greater employment stability in construction operations through developing and maintaining up to date information on available manpower resources, construction labor requirements, earnings, conditions of work, methods of improving productivity and training needs.

Finally, it would be essential for governments, generally, on all levels to plan and co-ordinate their construction programs in order to achieve maximum stability in this critical sector, and in the economy as a whole.

